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TRYPETIDAE

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9. TRYPETIDAE

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INTRODUCTION

The Trypetidae[1] are perhaps one of the largest, most diversified and interesting families of the acalyptrate Diptera; it is almost impossible at the present time to make a count of the number of genera and species. A relatively large amount of work is being done on the family in various parts of the world, and the present author has been privileged to study probably more Ethiopian material than has before been available. Not the least important and valuable have been the large collections obtained by the British Museum, especially the material collected on the East African Expedition 1934–1935, as well as smaller collections made by the late R. E. Turner and by others. Since it has not been possible to study any one lot of material alone, mention may be made of other considerable collections that have been available, for example, from Eritrea made by Mr. G. De Lotto, from the Coryndon Museum, Nairobi, largely reared by Dr. V. G. L. van Someren, material collected and reared by Mr. J. M. McGough while searching for fruit-fly parasites on behalf of the United States Department of Agriculture and others, as well as the large collections built up in South Africa, much of it reared by the author.

Acknowledgment and thanks are made to the Trustees of the British Museum and the members of the Department of Entomology (Mr. N. D. Riley, Mr. H. Oldroyd, Dr. John Smart and particularly the late Dr. F. W. Edwards, who collected most of the specimens) for the loan of material, and assistance in the examination of types. Thanks are also due to Dr. L. S. B. Leakey, Curator of the Coryndon Museum, Nairobi, to Dr. Remington Kellogg, Director, United States National Museum, and Mr. C. F. W. Muesebeck, in charge Division of Insect Identifications, United States Department of Agriculture.

Types, unless otherwise indicated, are in the British Museum; when available paratypes have been deposited in the South African National Collection of Insects, Pretoria, and paratypes of other material, when available, will be deposited in the British Museum.

The Trypetidae collected on the Expedition mostly belong to the Tephritinae and are not generally representative of the Ethiopian fauna as a whole; however, the tentative conclusions given on page 2 of Vol. I, Part 1, of these reports may form a basis for comment.

[1] Trupaneidae, Trypaneidae, Tephritidae, Euribiidae, *auctt.*

The relatively large amount of material taken on the Expedition, added to much from other sources, is still too little on which to base anything like final conclusions. There are two factors that must be taken into account: one, the limited areas in which collecting has been done compared with the whole of Africa, the other, the usually short periods during which collecting has been done; species previously known only from an isolated locality are constantly being recorded from new places. Further, different species may appear at varying times during the year in accordance with the growth, flowering and fruiting of host-plants. As regards the first conclusion, it may be said that the Trypetidae vary in relation to the plant zones, within certain limits, but that neither climate nor altitude appears to have any effect on the occurrence of the insects themselves.

In considering the Trypetidae, an important point is that all are directly dependent on live, or at least quite fresh, plant material in the larval stage, and that, therefore, their ecology depends to a large extent on factors governing the ecology of their host-plants. If a host-plant is absent from an area, a species that lives on it cannot exist there. This is well shown in the absence of certain genera such as *Isoconia*, *Platensina* and *Pliomelaena* from the Cape Peninsula area in South Africa; their only known host-plants are species of Acanthaceae, a group of plants that does not occur in that area. Ceratitine species that live in more or less succulent fruits are generally absent from open grass veld. On the other hand, flower-infesting Trypetidae, largely attached to Compositae, have a wider area of distribution than was generally recognised by Bezzi, who at any rate noted two very broad distribution areas, one for the fruit-infesting, the other for the flower-infesting species. It is evident, however, that plants bearing succulent fruits tend to be more restricted to forest areas, while the distribution of Compositae and plant groups such as the Acanthaceae is more general. Thus, in the high alpine zones of the mountainous regions of East Africa, there may be few, if any, fruits suitable for the Ceratitini, but there are Compositae, particularly *Senecio* and *Helichrysum*, so that here Tephritine species would predominate. In the lower forest zones where Ceratitini may find suitable host-plants, Compositae, etc., are also present, and Tephritine may be as numerous as Ceratitine species. Such statements are, at best, very generalised as there is still much to be discovered about the ecology and host-plant relationships of the Trypetidae. Climatic differences, temperature and humidity, and altitude, apart from extremes, appear to have in general little effect on the flies. However, there is evidence that some species may show ecological adaptations distinct from host-plant needs. When *Trirhithromyia lycii* (Coq.) occurs in more arid Karoo areas where there may be periodic droughts, a pupal diapause may extend over two or three seasons; apparently only a few may do so, but it has not been ascertained whether this happens regularly every year. The larvae live in the berries of *Lycium* spp., and the phenomenon

has not been observed in material collected along the more humid coastal areas.

Continuous distribution over large areas may be relatively rare, but seems to occur in the case of *Trupanea bisreducta* Bezzi and *Sphenella melanostigma* Bezzi. Normally, and depending on host-plants, there may be larger or smaller breaks. Actual discontinuous distribution, with which the idea of subspecies is associated, may occur, but may prove to be less in extent than expected, when more extensive collecting has been done. *Dacus eminus* Munro was described from one specimen from Durban and one from Rosslyn, near Pretoria, about 500 miles apart; recently it was reared at Lisikili, near Katima Mulilo, on the Zambezi, some 600 miles somewhat north-west of Pretoria; that it is to be found between these three points is possible, maybe probable, but unknown.

As regards conclusions 2 and 3, the material is too little for any conclusive statements. It is true that new species of *Paroxyna* are described later in this paper, three from the Aberdares, five from the Kigezi district, but there is no reason to suppose that they exist only there and could not occur elsewhere. The curious genus *Axiothauma* may be endemic to the Aberdare region, but the host-plant is not known. That the genera from high altitudes (*Paroxyna, Actinoptera,* etc.) show a palaearctic facies is to be expected since the host-plants are predominantly Compositae, as is the case in the Palaearctic Region. However, some of the species are also found at lower levels where, naturally, there are also Compositae particularly in open areas between forests and in grass veld. That a species has only been recorded from a limited locality during a limited collecting period is not sufficient evidence that it is endemic; at the same time it is curious that, under such circumstances, some apparently localised species have been taken together with others that are widespread. Only extensive and continuous collecting, including rearing, can supply more data.

Under conclusion 4 it seems necessary to indicate more clearly what is meant by a "palaearctic" element, whether the term should be applied to species, genus or tribe, or merely as a matter of general relationship. The common genera, such as *Paroxyna,* of which species were taken at high altitudes, may be cosmopolitan rather than palaearctic; the possible identity of species from the various zoo-geographical regions of the world, and even the generic relationships, must await a much closer study, both of African and palaearctic species, than has been possible so far.

Up to the present time there do not appear to have been recorded any brachypterous Trypetidae, that is, species in which the wings are so short that flight is not possible (conclusion 5).

The phenomenon of gigantism among plants, notably the giant Senecios, in the East African mountains is remarkable. In only one Trypetid, *Axiothauma*

albinodosum Munro, is there anything that may be regarded as excessive size, the female in particular being comparatively large and heavy-bodied. In most species there is a fairly constant mean size. Specimens from small flowers may be smaller; in a large fruit or flower more maggots develop. Abnormally large specimens are very rare.

Studies on the taxonomy of the Trypetidae, or fruit-flies, indicate that the subject is becoming, and actually is, extremely complicated and involved. To a large extent earlier work has been confined to the more external and readily observed characters, while those not so easily examined have been passed by. Such a superficial study may sometimes be sufficient, but there is an increasing number of cases in which the usual external characters are so much alike, so variable and have such a similar range of variation, that species cannot be separated on them with certainty. Neither superficial similarity nor the occurrence of specimens together are safe guides to conspecificity. In such cases it is necessary, apart from the possible phylogenetic value, to study the more hidden characters, in particular the male terminalia, including the sternites, which in most specimens of these flies are too obscured for direct observation; the main characters of the terminalia are external and merit as much attention as any other. Specific differences that they may show may vary from one genus to another, strong in some, weak in others. Character amphimixis is evident, but often one or other character may have a very marked species difference. The usefulness of these structures varies from one group to another. Among species of *Paroxyna* marked differences may be found and at times provide the only way in which two or more allied species may be separated. In some cases, therefore, it is not possible to associate the sexes with certainty, although a more detailed study of the females, based on dissections, may reveal distinguishing characters. On the other hand, among species of *Actinoptera*, the male genitalia seem much alike, but differences in the shape of the sternites seem to be of use, and differences in the length of the oviscape are of assistance.

Both biological and ecological data are increasing in importance to the taxonomist, but basically the final species differentiation and identification must rest on sound morphological taxonomy. It becomes more necessary, also, when studying a species to have several, if not many, specimens and this is especially so when a so-called new species is described. Whether or not a new species should be erected when only one specimen is available must be left to the discretion of the individual worker, but it is recommended that this be avoided as much as possible. A sound knowledge of a group should provide a guide as to when such a course is safe, but caution is always needed. It may be mentioned that among the Ceratitini there are cases in which the females of two very distinct males are so alike they cannot be separated, and that, as among species of *Paroxyna* at present, some can only be separated on the male

terminalia. A species cannot be studied on one specimen, and the fact that the name is applied primarily to a single "Type" is perhaps beside the point. For clear thinking a name is required and for practical reasons the name as such must be attached to one specimen; by and large, however, this should be subsidiary and subservient to the study of species. The mere making of names cannot be an end in itself, but maybe the desire and need to find and record something new is fundamentally human.

Small value can be placed on conclusions and deductions in regard to biology, ecology and distribution if the insect species are not fully and correctly understood. Little is to be gained if forms of one species are regarded as distinct or if actually distinct species are regarded as one. Even less is to be achieved by naming "new" species on small differences in inadequate material. More detailed study becomes necessary, requiring more time and the closer examination of morphological details so that the limits of a species may be assessed.

A species is primarily a population of similar individuals, but this is a bald statement, for among insects it is obvious that vast differences may occur within a species. First there are the stages in the life-cycle, and these can only be connected one with another by rearing; even the two sexes may be so unlike, as in Mutillidae, that they cannot be associated taxonomically, and this does happen to some extent among the Trypetidae. Up to the present, taxonomic systems have been mainly concerned with the adult stage of insects, and a general object may be said to be to enable single specimens to be located in the correct species. The chief difficulty is individual variation.

Every morphological feature appears to be, or is likely to be, an independent variable, and even portions of a character, such as of the head or wing-pattern, may vary in themselves. The over-all characterisation, as represented by the sum of the variations of each and all characters within fairly narrow limits, gives the species aspect as represented by individuals; an excessive variation, normal or otherwise, of any one character, such as the greater lengthening of the eye, may give an impression that a specimen is different until the balance of characters is studied. From this it may be decided whether or not the excessive difference could be a species differentiating character, and this cannot, as a rule, be done on single specimens.

A study of the balance of characters should lead to an understanding of what a species is, and be of use in elucidating the phylogenetic value of characters, that is, in classification. On the other hand, it is almost axiomatic that it is essential to discover one, if not more, fixed and distinctive characters that will distinguish a species from one closely allied.

The handling and examination of thousands of specimens is in itself time-consuming, and even more time is needed for the preparation of dissections of male terminalia and, it may be added, the increasing need to mount a wing on a slide for critical study.

The condition of specimens is of the greatest importance and faulty methods of collecting, pinning and mounting add their quota to the difficulties that beset the taxonomist. Pins so large that they destroy the greater part of the dorsum of the thorax do not make the task of identification and description any easier, if indeed such specimens should be used for this purpose. Pins that contain copper should be avoided as the verdigris that develops may in time break up a specimen; washing the specimens in ether is the only means to alleviate the trouble. As fine a pin as possible should be used and passed vertically through the thorax on the right side above the wing base. Lateral pinning usually destroys similar characters on both sides. Points are perhaps to be less preferred, but when the mounting is done with care, are better than unsuitable pins.

The rearing of Trypetidae is one of the most satisfactory and important ways of getting material, both in quantity and quality. This means specialised and more restricted collecting, but it is often the only way in which some species may be secured if only short periods can be devoted to field work. Flies may emerge from one to three months, or even more, after the host-plant material has been collected. During an expedition of about six weeks in 1952 to Barotseland, Northern Rhodesia, fewer than a dozen specimens of Trypetidae were taken in the net, mainly by sweeping; on the other hand, over 600 were eventually reared. It is not necessary to go into details of rearing here, except to mention one very important point, namely, that the adults must be kept alive for at least four days after emergence, or even a week or more if possible. All too often flies are killed and pinned almost at once after they emerge from the puparium, sometimes even before the wings have expanded. Such specimens are soft and teneral, have not attained full coloration and usually shrivel after being mounted. They are, indeed, of little use and it is often a waste of time and effort to try to identify them. Actually "new species" have been described on such undeveloped specimens. The flies should not be put into alcohol.

Finally, some at least of every lot of specimens should be fixed as soon a they are pinned by immersing them in ether for a few hours. This treatment causes the proboscis to become extended and often the pseudo-tracheae are fully exposed. Sometimes in very small (2 mm.) flies the wing membrane folds over and cannot be straightened out. Washing greasy specimens in ether is very efficient in cleaning them.

The botany of the equatorial mountains appears to have been extensively studied as may be learnt from papers in the *Kew Bulletin* and in the *Journal of the East Africa and Uganda Natural History Society* (see, for instance, No. 44, January 1932, "Notes on the Flora and Fauna of Ruwenzori with special reference to the Bujuku Valley", by C. W. L. Fishlock and G. R. L. Hancock).

In a paper on the "Flora of Mount Elgon" in the *Kew Bulletin*, **1933**, No. 2, an enumeration of the plants is given by A. A. Bullock. The flora is stated to be typical of the equatorial mountains. Three plant zones are recognised (more by some authors): (*a*) submontane, 6000 to 7500 ft.; (*b*) mountain forest, 7500 to 13,000 ft.; and (*c*) alpine, 13,000 to 14,000 ft.

In general, plants recorded from these zones are such as could be host-plants of the Trypetidae taken at similar altitudes. To have reared specimens would have been of value, but such biological work while on an expedition needs special facilities. It would, however, be of interest to know whether certain plants, such as the giant *Senecios*, that are restricted in their distribution, support specialised species of Trypetidae.

SYSTEMATIC ACCOUNT OF THE SPECIES

The following systematic account of the Trypetidae collected by the Ruwenzori Expedition will inevitably seem somewhat patchy when viewed in relation to the African Trypetid fauna as a whole. The collections were particularly rich in species of the *Paroxyna* group, less so in relation to *Actinoptera, Acanthiophilus, Tephritomyia* and a few other genera, remarkably poor in Tephritinae such as *Trupanea*, Dacinae and Rhabdochaetinae. No doubt this disparity reflects the relative abundance of these groups in the areas collected, rather than idiosyncracies of the collectors. However, it has caused me to devote especial attention to those groups and genera in which the collections were especially rich, and where by such treatment a relatively greater taxonomic advance could be made the more readily. To achieve a similar advance in respect of the less well-represented groups would have entailed the consideration of an extensive material not related to the work of the Expedition, and much more time than was available to me, and for those reasons has not been attempted.

Keys to the subfamilies are not here given since these can be found in the writings of Bezzi (1924) and, more recently, Hering. In the present state of our knowledge of the Trypetidae, moreover, it seems premature to attempt any closer definition of the higher taxonomic categories and better to await the attempt until such time as a satisfactory grouping of the genera has emerged.

Material from areas outside those visited by the Expedition is only recorded, in the case of species already known, when new information on the species mentioned has resulted from their examination, or a genus, for example, *Actinoptera*, has been dealt with as a whole. A number of new species from such areas are described, however, as it was convenient to do so in the course of working through the collections.

DACINAE

The African Dacinae need very thorough analytical study and this should include the species of the Oriental region. The faunas of the two regions differ in their broad outlines, but from work that has been done, especially by Perkins, there appears to be some overlapping of the generic distribution. One of the chief needs is to assess the value of the characters used to delimit genera and subgenera. At times it is hardly possible to locate females in the correct genus (or subgenus) since many genera are based on male characters. For this reason the subgenus has not been indicated in some cases in the following pages. On the other hand, there has been some tendency to group species on female characters. This is especially so in the case of certain species in which the oviscape is elongate and which authors tend to place in *Leptoxyda*. This character may indeed be some indication of relationship, but there are other species with shorter oviscape that are also obviously allied.

Specimens of *Dacus* taken on the Expedition are few and allow little comment on distribution. There are seven such species and records are added of specimens from various other sources in Africa.

Dacus (Afrodacus) biguttulus Bezzi

Chaetodacus biguttulus Bezzi, 1922, *Bol. Lab. Zool. Portici*, **15**: 294; 1924, *Bull. ent. Res.*, **15**: 86. Munro, 1924, *Dept. Agric. S. Afr. ent. Mem.*, No. **2**: 12, Plates II and IV.
Afrodacus biguttulus Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 470, Plate XII, f. 15, genotype. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*,[1] No. **3**: 45; 1929, *id.* No. **6**: 10. Perkins, 1937, *Proc. R. Soc. Qnsld.*, **48**: 55.

UGANDA: Ruwenzori, 1 ♀. Katwe, 26.xii.1934 (*F. W. Edwards*).

A small, teneral and shrivelled specimen that appears to be this South African species.

Dacus brevistriga Walker

Dacus brevistriga Walker, 1861, *Trans. ent. Soc. Lond.* N.S., **5**: 322. Bezzi, 1908, *Bol. Soc. ent. Ital.*, **39**: 138, 147; 1908, *Bol. Lab. Zool. Portici*, **3**: 292, 297; 1924, *Bull. ent. Res.*, **15**: 86, 88; 1924, *Ann. S. Afr. Mus.*, **19**: 461. Froggatt, *Report* 1909, 99. Speiser, 1910, *Wiss. Zool. Exp. Kilim.-Meru*, **10**: 182. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 42; 1926, *id.* No. **5**: 19; 1929, *Bull. ent. Res.*, **20**: 392; 1929, *Ann. S. Afr. Mus.*, **29**: 3.
Leptoxyda brevistriga Walker, Malloch, 1932, *Ann. Mag. nat. Hist.*, ser. 10, **10**: 300.
Dacus asclepiadens Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 468. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 42; 1929, *Bull. ent. Res.*, **20**: 392.

A common species infesting the pods of milk-weeds (Asclepiadaceae).

[1] It may be noted that from 1923 to 1935 the Entomology Memoirs of the Division of Entomology, Department of Agriculture, South Africa, were issued as a series of separate parts, each containing two or more papers, and numbered from 1 to 9; these are referred to in the references as No. 1, No. 2, etc. However, from 1937 the Memoirs were continued as from Vol. 2, each paper issued as a separate part, but the pagination consecutive throughout.

UGANDA: Mt. Muhavura, 7000 ft., 17–18.xi.1934 (*F. W. Edwards*), 1 ♂, 1 ♀.

A very well-marked pair; the postsutural dorsal thoracic stripe strong, as is more usual in East African specimens. In South African specimens this stripe is often weak or absent.

[Dacus aspilus Bézzi]

Dacus aspilus Bezzi, 1924, *Rev. zool. Afr.*, **12**: 10; 1924, *Bull. ent. Res.*, **15**: 85, 88. Munro, 1937, *Proc. R. ent. Soc. Lond.*, B. **6**: 42; *J. Ent. Soc. S. Afr.*, **11**: 17.
Dacus (*Leptoxyda*) *aspilus* Bezzi. Collart, 1935, *Bull. Mus. r. Hist. nat. Belg.*, **11**: 4 and 35 (under *D.* (*Didacus*) *langi* Curran).

UGANDA: Arua, 1919 (*Dr. R. E. McConnell*), 1 ♂.

[Dacus (Psilodacus) mochii Bezzi]

Dacus mochii Bezzi, 1917, *Bull. ent. Res.*, **8**: 65, Fig. 3; 1924, *id.* **15**: 87.
Dacus (*Psilodacus*) *mochii* Bezzi. Perkins, 1937, *Proc. R. Soc. Qnsld.*, **48**: 56. Collart, 1940, *Bull. Mus. r. Hist. nat. Belg.*, **16**: 20.

A female (UGANDA: Arua, 1919, *Dr. R. E. McConnell*) agrees with Collart's interpretation of this species; the extreme base of the first basal cell is infuscated and on the abdomen the apical ferruginous area, divided by a narrow, median, black stripe, extends to the middle of the fourth tergum so that there is no complete broad median stripe as indicated in Bezzi's description. The triangular, transverse, yellowish fascia on second tergum is strong. Oviscape ferruginous, 1 mm., about 0·2 wing-length, flattened in specimen. Venter yellowish. Total length 6·0 mm., wing 4·8 mm.

This and a Congo specimen appear to represent a more melanic form of a species which may also include *D. woodi Bezi* and *D. xanthopus* Bezzi.

[Dacus (Psilodacus) rufoscutellatus Hering]

Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 259, Taf. V, Fig. 1.

CENTRAL ABYSSINIA: Maraquo, viii.1914 (*O. Kovács*), 1 ♂. TANGANYIKA: Tshibinda, 21–27.viii.31 (*Miss J. Ogilvie*), 1 ♀. KENYA: Naivasha, vi.1936 (*H. J. A. Turner*), 1 ♂ Nairobi, vii.1937 (*V. G. L. van Someren*), "bred ex cluster cucurb", 2 ♀ (Coryndon Mus.).

The Abyssinian male and the two Nairobi females have the scutellum brownish; in the Naivasha male and Tshibinda female it is yellow, but all the specimens appear to belong to the same species. Hering states that the scutellum is ferruginous, but whether this darker colour is due to discoloration or not cannot be decided from available material.

The comparison with *D. rubicundus* Bezzi is misleading. The species is allied to *D. hyalobasis* Bezzi from which it differs in the isolated apical spot on the wing and that the pleural stripe is restricted to the mesopleura, not extending on to sternopleura and notopleura.

♀ like ♂, length 5·7 mm., wing 5·25 mm., rather narrow. Thorax mainly ferruginous, on dorsum a pair of narrow submedian grey stripes and a wide black stripe on either side partly interrupted at suture generally stronger than in male; postscutellar area black with median ferruginous stripe; humeri, very wide mesopleural stripe, single hypopleural spot, yellow, the scutellum somewhat ferruginous or yellow as noted, it is trapezoidal, convex above, 4 bristles; legs rather dark yellow; wing, only stigma, upper cross-vein narrowly and small apical spot infuscated, point of anal cell about 0·5 remainder of sixth vein, wide at base, end of fourth vein gently curved forward, barely recurved at tip. Abdomen, length 2·3 mm., sides broadly shining black, middle third ferruginous, widened at apex to include apical plates, no transverse fascia on tergum 2, pubescence short, pale. Oviscape 0·9 mm.

Dacus (Psilodacus) macer Bezzi

Dacus macer Bezzi, 1919, *Bull. ent. Res.*, **9**: 180, Fig. 3; 1924, *id.* 15: 87.
Psilodacus macer Bezzi. Hering, 1941, *Siruna Seva*, **3**: 9.

Uganda: Ruwenzori Range, xii.1934–i.1935, Bwamba Pass (west side), 5500–7500 ft. (*F. W. Edwards*), 1 ♀ and a small ♂; Kampala, 9.ix.1918 (*H. Hargreaves*), 1 ♂, 1 ♀.

The description and the few available specimens suggest that *D. macer* may be an extreme form of a species or group of species represented also by *maynéi* Bezzi, *tristis* Collart, and *inflatus* Munro. They agree in the absence of a narrow yellow margin along the postorbits. The body colour is black and yellow thoracic markings similar, but the notopleural callus may be yellow to almost black. The black abdomen has a strongly ferruginous tinge; there is no transverse fascia on tergum 2, but the apex, including the plaques, ferruginous. Oviscape 0·9 mm., wing-length 5·5 mm. In the pair from Kampala there are no dark spots on the frons on the sites of the weak lower orbital bristles. In all specimens the upper orbitals are absent.

Dacus (Dacus) disjunctus Bezzi

Tridacus disjunctus Bezzi, 1915, *Bull. ent. Res.*, **6**: 89, 96, Figs. 11, 12; 1924, *id.* **15**: 83. Curran, 1927, *Bull. Amer. Mus. nat. Hist.*, **57**: 88.
Dacus (*Dacus*) *disjunctus* Bezzi. Collart, 1935, *Bul. Mus. r. Hist. nat. Belg.*, **11**: 17; 1940, *id.* **16**: 3. Perkins, 1937, *Proc. R. Soc. Qnsld.*, **48**: 52.

Uganda: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*), 1 ♀.

This specimen agrees with Bezzi's description in the well-separated hypopleural spots and the very short oviscape; the latter, not visible in dorsal view, is flattened in specimen but is very wide so could be "tolerably swollen" as stated by Bezzi. The yellow fascia on tergum 2 is strong and interrupted in middle, but on the middle third terga 3, 4 and 5 are light brown, while Bezzi says "hind borders of second and last segments reddish-yellow".

The five females noted by Collart 1940 under *disjunctus* probably are *armatus*, but he does not mention the length of the oviscape. In any case, the difference in length of this structure between *disjunctus* and *armatus* is such that the two could not belong to the same species.

Dacus (Dacus) schoutedèni Collart

Collart, 1935, *Bul. Mus. r. Hist. nat. Belg.*, **11**: 11, Fig. 3. Perkins, 1937, *Proc. R. Soc. Qnsld.*, **48**: 52.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*), 2 ♂, 3 ♀.

The females agree almost perfectly with the description, as does the previously undescribed male. The brown spot on face, below antennae, may be absent. In male, third tergum ciliate, the ciliae, 5 or 6 on either side, rather long and curved over at ends, the outer ones most so and the outermost about 0·75 length of scutellum; venter and genitalia brownish.

Dacus (Dacus) croceus sp. n.

A black species somewhat like *D. schoutedeni* Coll., but with black abdomen, yellow postsutural spot on thorax and different wing-pattern. Also very like *D. linearis* Coll. agreeing well with the description, the wing-pattern almost identical; there are, however, no black spots on face and no yellow fascia on second abdominal tergum.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 1 ♀ (Holotype).

Length 6·2 mm.; wing 5·5 mm.

Head somewhat spherical, length, height, width, 6:7:10, posteriorly convex, shining black, broadly yellow on lower half of eye; frons width 0·6 length, 0·3 width of head, brown, ocellar dot and sides of vertex shining black, a yellow spot on each vertical plate and a yellow band across anterior fifth, 2 lower and 1 weaker, upper orbital; lunule reddish brown; antennae short, brown, mainly black on outer side, arista bare; face, cheeks and genae dirty yellowish, a brown spot below eye; palpi yellow, proboscis brown, short.

Thorax shining black, pubescence black, dorsum rugose, a pair of short, submedian, white-dusted stripes before sature; humeri broad, almost quadrilateral mesopleural stripe, just touching sterna below, notopleural callus above, a small spot on inner ends of suture, a short, broad, postsutural spot, single hypopleural and scutellum (except very narrow base, yellow; bristles normal, mid scapulars strong, anterior supra-alars present, 2 scutellars; postscutellum with white dust leaving a Y-shaped spot shining black; legs yellow, mid and hind coxae blackish, fore femora with slight brown mark on outer side, mid and hind femora brownish at outer ends, fore tibiae mainly brownish, others more or less on inner third; wing (Fig. 1) pattern brown, pale in outer costal

cell and below, very pale at outer ends of first and second posterior cells, a slight trace on middle of lower cross-vein, stigma very black; halteres yellow.

Abdomen: tergites fused, shining black, on tergite 2 a pair of tiny, very faint ferruginous spots and tip of abdomen with ferruginous tinge, surface rugose, pubescence white; oviscape short, 1·0 mm., flattened in specimen, blackish ferruginous, pale pubescence; mid portion and aculeus reddish; sternites shining black.

Dacus (Dacus) bivittatus Bigot

Leptoxys bivittatus Bigot, 1858, *Arch. Ent.* (*Thomson*), **2**: 374, Plate 10. Fig. 7.
Dacus (*Dacus*) *bivittatus* (Bigot). Munro, 1948, *Bull. ent. Res.*, **38**: 616.

UGANDA: Ruwenzori Range, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 2 ♂.

This species is one of the most serious pests of Cucurbitaceae throughout Africa. A detailed bibliography is given by Munro (1948) and need not be repeated here. It should be noted that this species is distinct from *D. armatus* Fabricius, and that the name *D. pectoralis* Walker 1861 cannot be used as it is a homonym of *D. pectoralis* Walker 1859.

Two forms, *bivittatus* Bigot and *cucumarius* Sack, were recognised and an attempt made to fix the limits of distribution. However, later material collected and reared by J. M. McGough, especially in the Cameroons, seems to show some at least of the conclusions may be incorrect. It will not be possible to clarify the position until a sufficiency of material from the type locality, Gabun,[1] is available.

TRYPETINAE (auct.)

(Ceratitinae auct.)

As it is more or less generally accepted, the subfamily Trypetinae includes a rather wide range of heterogenous genera. The present material is not sufficient in itself for a detailed revision and rearrangement to be made, but it will be of value in supplementing much other material that is available from various sources.

Of the species that belong to the typical fruit-infesting group, the true "fruit"-flies, and, generally speaking, the Ceratitini, the host-plants of some are still unknown. Twenty species of the tribe are recorded here, including sixteen taken on the Expedition and one interesting new species from West Africa. It is perhaps remarkable that no specimens of the common fruit-fly, the so-called Mediterranean fruit-fly, *Ceratitis capitata* (Wied.), were captured.

Species of the *Rhacoclaena* series are poorly represented, but one new genus

[1] Given as "Bagun", Munro, 1948, owing to a typing error.

and two new species are described. Mention may be made of the remarkable genus *Baryglossa* (p. 880). The nomenclatorial status of the generic name *Trypeta* is still very confused; until it is settled several tribal and subfamily names must also remain uncertain.

Celidodacus coloniarum (Speiser)

Acidia coloniarum Speiser, 1915, *Deutsche ent. Zeit.*, Jg. **1915**: 102.
Conradtina coloniarum (Speiser) Enderlein, 1920, *Zool. Jahrb. Syst.*, **43**: 343.
Philophylla coloniarum (Speiser) Bezzi, *Bull. ent. Res.*, **8**: 250.
Celidodacus coloniarum (Speiser) Bezzi, *Bull. ent. Res.*, **10**; 212, 221; 1924, *id.* **15**: 94.

UGANDA: Fort Portal, 24.i.1935 (*F. W. Edwards*), 1 ♀.

[Coelopacidia strigata Bezzi]

Bezzi, 1920, *Bull. ent. Res.*, **10**: 218; 1924, *id.* **15**: 93. Hendel, 1928, *Ent. Mitt.*, **17**: 349. Munro, 1929, *Union S. Afr. Dept. Agric. ent. Mem.*, No. **6**: 10; 1933, *id.* No. **8**: 27; 1935, *id.* No. **9**: 24.
(Not: Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 473, Plate XII, Fig. 17. Munro, 1925, *op. cit.*, No. **3**: 45. These are *Stenotrypeta vivax* Munro, but the two genera may be synonymous.)

UGANDA: between Sezwa River and Kampala, 3500–3750 ft., 27–31.viii.1911 (*S. A. Neave*, 1 ♀. ASHANTI: Obuasi, 13.x.1907 (*W. M. Graham*), "caught on leaf", 1 (no abdomen).

Leucotaeniella trispila Bezzi

Bezzi, 1918, *Bull. ent. Res.*, **8**: 227; 1920, *id.* 10: 212; 1924, *id.* **15**: 75; 1924, *Ann. S. Afr. Mus.*, **19**: 471, 475.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*), 4 ♀.

In Bezzi's figure of the wing of this species there is no indication of any yellowish connection along the veins between the bands; in most specimens, however, there is a narrow, yellow infuscation along the veins. This is often sufficient to bring into prominence a hyaline spot between the inner ends of the basal and cubital and of the cubital and medial bands, but it is by no means like what is to be seen in *guttipennis* Bezzi.

[Leucotaeniella (? pentaspila Bezzi)]

Leucotaeniella pentaspila Bezzi, 1918, *Bull. ent. Res.*, **8**: 229; 1924, *id.* **15**: 97.

ANGOLA: Benguella (*F. C. Wellman*), 1 ♂.

This is a large yellow specimen that agrees fairly well with the description of *pentaspila*, as well as with smaller, yellow specimens from the Belgian Congo. The species was first described from the Sudan.

[Leucotaeniella grata (Wiedemann)]

Trypeta grata Wiedemann, 1830, *Aussereurop. zweifl. Insekt.*, **2**: 498. Loew, 1861, *Berl. ent. Zeit.*, **5**: 266, Taf. ii, Fig. 6; 1862, *Öfv. Vet.-Akad. Förh.*, **19**: 3. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131. Bezzi, 1908, *Bol. Soc. ent. Ital.*, **39**: 140.

Ceratitis grata (Wiedemann) Enderlein, 1911, *Zool. Jahrb. Syst.*, **31**: 411; 1920, *id.* **43**: 351. Bezzi, 1913, *Bol. Lab. Zool. Portici*, **7**: 23.

Carpophthoromyia grata (Wiedemann) Austen, 1910, *Bull. ent. Res.*, **1**: 71. Bezzi, 1918, *Bull. ent. Res.*, **8**: 227.

Leucotaeniella grata (Wiedemann) Bezzi, *Ann. S. Afr. Mus.*, **19**: 475, Plate XII, Fig. 18. Munro, 1926, *Dept. Agric. S. Afr. ent. Mem.*, No. **5**: 21; 1933, *id.* No. **8**: 29.

Cape Province: Katberg, 14–26.xi.1932 (*R. E. Turner*), 1 ♂. Natal: Van Reenen, Drakensberg, 1–22.i.1927 (*R. E. Turner*), 1 ♂.

The species appears to be very variable. Further, *L. grata* occurs only in South Africa; specimens recorded as such from farther north are probably another species.

Clinotaenia atlas sp. n.

Differs from the genotype, *anastrephina* Bezzi, which has the cubital band on the wing free and the scutellum yellow above; here the cubital is broadly united and the scutellum dark with a few yellow spots. *"Trirhithrum" litteratum* Munro 1932 may be better placed here; the wing-pattern is heavier and the united cubital recurved.

Uganda: Ruwenzori Range, Namwamba Valley, 6500 ft., i.1935 (*F. W. Edwards*). Type ♂. Kenya: Kalinzu, x.1937, allotype ♀, paratype ♂, rather faded (Coryndon Museum).

Length, ♂ 5·5 mm., ♀ 8·0 mm.; wing ♂ 7.0 mm., ♀ 7·7 mm.

Head yellow, posteriorly swollen below with yellow clothing, brown above neck (remaining broadly yellow behind vertex) with a wide arm to upper part of eye on either side; a brown spot on gena below eye; frons yellow, glistening in male, vertical plates shining, ocellar dot blackish, 2 upper orbitals, the anterior one near mid-frons on slight tubercle, 3 lower, ocellars long, post-orbitals short, fine, black, slight fine, black pubescence; lunule short; antennae 0·6 face, third joint yellow or rather darker, second prominent, spinulose, arista: plumosity about as wide as third antennal joint; face arched, the flat epistome curved outwards, parafacials moderate, genal bristle strong, black, clothing below eye brown; proboscis short, palpi flat with black setae.

Thorax dark brown or almost blackish ferruginous on dorsum; humeri, spot on notopleural callus, a short streak behind suture on dorso-central line, yellow; 3 black spots along sides; a wide, median, silvery stripe with pale pubescence, divided by a narrow median brown streak, on the brown parts a trace of dust and black pubescence; pleura and sterna brown with black pubescence, but upper two-thirds of mesopleura (with pale pubescence) broadly over wing-base and behind to include double hypopleural spot, yellow to whitish; bristles

normal, black; scutellum and postscutellum blackish ferruginous, scutellum with yellow spot at mid-base, a pair on each side and posteriorly a small spot on outer side of apical bristles; the last may be somewhat more elongate but not so much as to divide the brown into three more or less quadrate areas; scutellum rounded, slightly swollen; squamae whitish; halteres brownish; legs normal, mainly ferruginous, paler towards extremities, strong apical setae on mid-tibiae; wing (Fig. 2) 2–3 strong costal bristles; third vein setulose to line of lower cross-vein; pattern brown, both cubital and medial bands broadly united.

Abdomen: ♂, brown with black pubescence, but tergum 2 and posterior four-fifths of 4 with heavy silvery dust and dense pale pubescence, tergum 5 with strong row of black, apical bristles; ♀, brown with black pubescence, tegum 3 more velvety brown and 5 with a moderate yellow spot on middle, 2 and hind three-fourths of 4 heavy silvery dust and dense pale pubescence, short 6 with apical row of black bristles; oviscape brown ferruginous and black pubescence, 1·8 mm., rather flattened legging-shaped.

Chelyophora magniceps Bezzi

Chelyophora magniceps Bezzi, 1918, *Bull. ent. Res.*, **8**: 229; 1924, *id.* **15**: 98. Hering, 1942, *Mitt. zool. Mus. Berl.*, **25**: 280.
Chelyophora lemniscata Enderlein, 1920, *Zool. Jahrb. Syst.*, **43**: 355.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 1 ♀.

Bistrispinaria fortis Speiser

Ceratitis (*Bistrispinaria*) *fortis* Speiser, 1913, *Deutsche ent. Zeit.*, (**1913**): 145.
Bistrispinaria fortis Speiser, Enderlein, 1920, *Zool. Jahrb. Syst.*, **43**: 357. Bezzi, *Bull. ent. Res.*, **10**: 224, Plate XVII, Fig. 14; 1924, *id.* **15**: 98; 1924, *Rev. zool. Afr.*, **12**: 14.
Pardalaspis aglaspis Séguy, 1940, *Ann. Soc. nt. France*, **109**: 117, Fig. 2. Hering, 1942, *Mitt. zool. Mus. Berl.*, **25**: 291 (syn. nov.).

Originally described from Cameroon, the species seems to be not uncommon in Uganda; Bezzi records it from the Congo. Specimens from the Cameroons and Uganda are identical, and there can be no doubt that Séguy's species is the same.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 2 ♂. BRITISH CAMEROONS: Kumba, 11.x.1949, 1 ♂, and Nyassoso, 3.xi.1949, 1 ♂ (*H. Oldroyd*).

Carpophthoromyia pseudotritea Bezzi

Carpophthoromyia pseudotritea Bezzi, 1918, *Bull. ent. Res.*, **8**: 225, Plate V, Fig. 1; 1924, *id.* **15**: 96.
Ceratitis tritea Bezzi, *nec* Walker, 1849, *Bol. Lab. Zool. Portici*, **7**: 25, Fig. 2.
Ceratitis tritea Silvestri, *nec* Walker, 1849, *Bol. Lab. Zool. Portici*, **8**: 69, Fig. 14.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*), 2 ♀.

Pardalaspis edwardsi sp. n.

A large robust species; it differs from *punctata* in having mainly black, not all pale mesopleural pubescence; *ditissima* has also black pubescence, but is a relatively smaller species, and, particularly in the male, there is a marked brown band on the sides and around the front of the dorsum of the thorax.

Uganda: Entebbe, 13.xii.1934 (*F. W. Edwards*), Type ♀; Kawanda, 21.x.1939 (*H. Hargreaves*). Allotype ♂, 1 paratype ♀, same locality, 7.ix.1940 (*T. H. C. Taylor*), 2 ♂ paratypes. Coll. No. G.1014, G.1015, Entomologist, Kawanda, reared from fruits of *Voacanga obtusa* K. Schaum (Apocynaceae). (Allotype ♂ in S. Afr. Nat. Coll. Ins., Pretoria; paratypes at Kawanda.) Belgian Congo: Yangambi, ii.1951 (*J. M. McGough*), 8 ♂, 8 ♀ paratypes (McG. No. 141), from fruits of *Conopharyngia durissima* Stapf. (Apocynaceae). (4 ♂, 4 ♀ paratypes each in U.S.N.M. and S. A. Nat. Coll. Ins.)

Length, ♂ 8·0 mm., ♀ 11·5 mm.; wing, ♂ 8·0 mm., ♀ 8·5 mm. (reared specimens on the whole somewhat smaller).

Fresh specimens are distinctly blackish, but those ten years old or more have become brownish.

Head: length, height, width, 6:8:10, the fronto-facial aspect more rounded oval, the height being relatively greater (height/width, 0·76 to 0·79) and the eye thus more elongate vertically; frons, ♂, ferruginous, broadly silvery on sides, the median third weakly so but more strongly behind; ♀, brown, silvery on margins anteriorly, on vertical plates and on ocellar triangle; the general colour of the frons depends on the condition of the specimen; lunule very short; antennae orange, arista short plumose at base, grading to almost nothing at tip; short proboscis and palpi yellow.

Thorax brown, a slight median and darker brown, broken, dorso-central stripes, prescutellar yellow spots strong; pubescence pale, black on stripes, and rather more black in male; mesopleural pubescence pale on yellow upper half, black on top edge and on lower half, long pale on pteropleura and propleura; bristles normal, 2 mesopleurals; squamae, upper blackened, with black rim and fringe, lower yellow with yellow rim and fringe; scutellum normal, moderately swollen, with the usual, 3 apical rectangular black areas and a pair of basal spots; postscutellum black; legs: femora ochraceous, tibiae and tarsi yellow, anterior femora with row of long, black, antero-ventral bristles; wing (Fig. 3), bands blackish brown (browner in older specimens), basal streaks strong, marginal band strongly united to basal, cubital free, no median, white argent streaks present also forming an axillary pattern.

Abdomen brown, apex dark, spots well developed, submedian pair on tergum 3 large, on 4 small and on 5 moderate, a moderate sublateral row and a weak median; dust slight, pale brown, dark on spots; pubescence black on spots, between more or less pale, mostly pale at base, apical bristles strong; oviscape

moderately long, 3 mm., 0·38 wing-length, castaneous, darker on distal half, pubescence black with a prebasal pale band.

[Pardalaspis cuthbertsoni Munro]

Munro, 1936, *Occ. Papers, Rhod. Mus.*, 1, No. **5**: 42.

KENYA: Embu, 1.ix.13 (*G. J. O. Browne*), No. 47. II., 1 ♀. TANGANYIKA: dist..Lushoto, 1934–1935 (*J. P. Ingram*), 1 ♀.

Pardalaspis argenteobrunnea Munro

Munro, 1935, *Ann. Mag. nat. Hist.*, Ser. 10, **15**: 312.

UGANDA: Ruwenzori: Nyamgasani Valley, 6400 ft. (*D. R. Buxton*), 1 ♂.

Comparison with the description and with notes made on the type, a female, shows that this is the male of the same species. Some differences, possibly only sexual, may be noted: the cheeks are yellow, not brown; on dorsum of thorax the black streaks are broken into spots that are barely connected, leaving three small black spots before suture and three larger just behind, besides the large black spots before the prescutellar yellow areas which are united on the median line. On the abdomen, tergum 2 has only a faint silvery hind margin, but the hind half of the fourth is strongly silvery. Genitalia reddish, venter blackish.

Pardalaspis turneri Munro

Munro, 1937, *J. E. Afr. & Uganda Nat. Hist. Soc.*, Sp. Suppl. **5**: 5.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935, 1 ♂; Mobuku Valley, Bikori, 7300 ft., 29–31.xii.1934 (*F. W. Edwards*), 1 ♀.

[Pterandrus tripteris sp. n.]

Mainly characterised by the feathering of all legs in the male, but females may not be readily distinguished from females of other species in the absence of males. However, in *colae* Silv. and *anonae* Grah. the marginal band is free; it is united to the basal in *pinnatifemur* End. and in *penicillatus* Big., both only known from the single male types. Bigot's species has apparently well-marked cubital and medial bands; the female of Enderlein's species may perhaps only be definitely recognised when associated with the male. Bezzi at least assumes the arista has rather long plumosity.

SIERRA LEONE (*W. G. Clements*) (B.M., 98–20): Holotype ♂. NIGERIA: Olokemeji, 1936 (*van Zwaluwenburg and McGough*): from fruits of *Adenia* sp., allotype ♀, 5 ♂, 7 ♀ paratypes (U.S.N.M.), 2 ♂, 3 ♀ paratypes (S. Afr. Nat. Coll. Ins.). These reared specimens are in very poor condition and appear to have been killed too soon after emergence; they also seem to have been in

alcohol and later dried and mounted on points. The best were sorted out for the type series.

Length, ♂ 5·5 mm., ♀ 4·7 mm.; wing, ♂ 5·2 mm., ♀ 4·5 mm.

Head yellow, darkened above posteriorly, postgenae slightly swollen; length, height, width, 5:7·5:10; frons flat, deeper yellow, width 1·3 length, 0·3 width of head, bristles normal, 2 upper, 2 lower orbitals, ocellars long and strong, trace fine black pubescence; lunule short; antennae yellow, 0·6 face, arista short plumose to tip; face whitish yellow, epistome flat, cheeks and genae narrow; palpi and short proboscis yellow.

Thorax brown, pubescence pale, dust golden; bristles normal, 1 mesopleural, scapulars present; humeri yellow, slightly darkened, pleura yellow, pale yellow pubescence, sterna brown; scutellum moderately swollen, base rather widely yellow with pair of black spots and 3 apical, black areas, 4 bristles, apicals 0·8 basals; squamae blackish; halteres brown; legs, ♂, brown; front femora rather swollen, upper half black, along upper side a thick-set row of short, curved, black feathering on whole length, below, on distal half, a row of feathering, long at middle of femora, short distally; mid-femora; a strong brown stripe along antero-ventral aspect, below, just beyond the middle, a small group of feathering; hind femora, a short brown streak on proximal half of antero-dorsal aspect, on distal fourth, above and below, an irregular group of feathering; middle tibiae, a brown stripe along postero-dorsal aspect and an apical spine, feathering, above a moderately long, finer, close-set row, below a double row on distal two-thirds, outer row longer, longest and distinctly flattened and curved just before distal end, inner row shorter, less erect; other tibiae and all tarsi yellow, normal; wing (Fig. 4, ♂): basal streaks moderate, marginal band united to basal, cubital free, in male a short medial streak over end of vein 4, absent in female, in which also the axillary region is less developed.

Abdomen mainly yellowish brown, but more or less banded with pale shining pubescence and slight dust, ♂, base blackened, tergum 2 yellowish brown, 3 anterior third brown, posterior two-thirds deep brown, 4 anterior fourth brown, posterior three-fourths yellowish brown, 5 yellowish brown, brown on sides and posteriorly, ♀, base yellow, tergum 3, anterior half yellowish brown, posterior half dark brown, 4 and 5 each anterior half yellowish brown, posterior half yellow; oviscape short, 1·5 mm., 0·3 wing-length, dark yellowish, brownish at tip.

Pterandrus rubivorus (Coquillett)

Ceratitis rubivora Coquillett, 1901, *Proc. U.S. nat. Mus.*, No. 1243, **24**: 29.
Pterandrus rubivorus (Coquillett) Bezzi, 1918, *Bull. ent. Res.*, **8**: 232. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 49.

The above three pertinent references are given in connection with the following variety.

Pterandrus rubivorus (Coquillett) var. **volucris** Bezzi

Pterandrus volucris Bezzi, 1918, *Bull. ent. Res.*, **8**: 232; 1924, *id.* **15**: 99, 100.

UGANDA: Entebbe, 13.xii.1934 (*F. W. Edwards*), 1 ♀.

Comparison of specimens from East Africa and from South Africa indicate that there is only one species. However, the East African specimens are on the whole darker than from the South. Both are recorded infesting the fruits of *Rubus* spp.

Perilampsis pulchella (Austen)

Carpophthoromyia pulchella Austen, 1910, *Bull. ent. Res.*, **1**: 72. Speiser, 1915, *Deutsche ent. Zeit*, **1915**, II, 101. Bezzi, 1918, *Bull. ent. Res.*, **8**: 227.
Ceratitis pulchella (Austen) Bezzi, 1913, *Bol. Lab. Zool. Portici*, **7**: 23.
Perilampsis pulchella (Austen) Bezzi, 1920, *Bull. ent. Res.*, **10**: 233; 1924, *id.* **15**: 104. Munro, 1939, *J. Ent. Soc. S. Afr.*, **1**: 40.

UGANDA: Entebbe, 13.xii.1934 (*F. W. Edwards*), 1 ♀.

[**Trirhithrum dimorphum** Munro]

Munro, 1935, *Bull. ent. Res.*, **25**: 484, Fig. 3.

The male and female types in the British Museum are from Sierra Leone. No other specimens definitely like the types have been seen, but compare *Trirhithrum meladiscum* which follows.

Trirhithrum meladiscum Munro

Munro, 1938, *J. E. Afr. & Uganda Nat. Hist. Soc.*, **13**: 166.

Described on specimens reared in Kenya by *V. G. L. van Someren* from fruits of *Psychotria cristata*, together with a pair of paratypes.

UGANDA: Ruwenzori Mobuku Valley, 7300 ft., xii.1934–i.1935 (*F. W. Edwards*).

It is difficult in the absence of sufficient material to decide whether *meladiscum* and *dimorphum* are the same. Two males (S. Afr. Nat. Coll. Ins.) from Gold Coast, reared from fruits of *Psychotria* sp. by H. E. Box, are better regarded as *meladiscum*, although the silvery bars on the abdomen are not apparent. On the whole, the wing-pattern in the *meladiscum* series is less defined, the hyaline areas along the costa not so marked; also, in the female the basal streaks are more developed than in the male or female of *dimorphum*. The colour of the dorsal thoracic pubescence appears dark, if not black, but is very strongly yellow shining.

[Trirhithrum fraternum Munro]

Munro, 1935, *Bull. ent. Res.*, **25**: 482, Fig. 2.

UGANDA: Entebbe, 21.viii.1911 (*C. C. Gowdey*), 1 ♂.

It may be still doubtful whether the female associated with the male type is actually the same species. In later West African material (Gold Coast, Adawo, H. E. Box), the males and females have the cubital band united. In two males from the Coryndon Museum (Ukerewe Island, Tanganyika, Father Conrad) the one has the cubital narrowly united, in the other slightly separated. In the Entebbe male, and in a female from Bukoba, Tanganyika (both specimens rather larger than those from West Africa), the cubital is rather widely separated, that is, by a distance about twice the greatest width of the band. Otherwise the specimens all appear identical, but much more material for closer study is needed to clear the position.

Trirhithrum micans sp. n.

Similar to *facetum* End. and *bimaculatum* v. Röd., but distinguished as under:

	micans	*facetum*	*bimaculatum*
cubital band	free	free	united
medial band	tooth	absent	tooth
humeral and basal bands	united, only costal indent	large separated	united, with costal indent
scutellum	lateral and apical yellow spots	black	black

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935. Holotype ♂ and a damaged paratype ♂. Namwamba Valley, 6500 ft., i.1935, allotype ♀ (*F. W. Edwards*).

Length, ♂ 4·5 mm., ♀ 5·0 mm.; wing, ♂ 4·75 mm., ♀ 5·5 mm.

Head: length, height, width, 5:7:10; posteriorly concave and blackish above, with triangular brown spot behind vertex, below moderate, brown with black hairs; frons rather less than half width of head, widened a little to antennae, flat, yellowish brown, black across vertex and ocellar dot, dark brown at sides of antennae, slight black pubescence, 2 lower, 2 upper orbitals, ocellars moderate; lunule inconspicuous; antennae brown, more or less blackish, 0·6 face, arista plumose, 3 rows; face flat, yellow, brown below antennae, parafacials yellow, genae largely brown below eyes, palpi yellow, proboscis black.

Thorax black, sutures reddish, humeri brownish with black spot, very narrow notopleural stripe yellowish; dorsum with very slight, shimmering dust, pubescence pale, black before suture and on sides; scutellum slightly swollen,

black pubescence and shimmering dust, 4 bristles, an apical pair of yellow spots and an inconspicuous pair on each side; pleura shining black, black pubescence, pale on pteropleura; legs, coxae and femora black, tibiae blackened on proximal ends and in female, hind tibiae mainly black, legs otherwise yellow; squamae white with brown margins; wing (Fig. 5) humeral and basal bands united, only a few basal hyaline streaks, but a strong costal hyaline indent, cubital free, barely a trace uniting it to marginal, medial a tooth, marginal narrow, with weak costal hyaline spots.

Abdomen black, pubescence black but white on middle of second and fourth tergites; in female hind margins of third and fourth tergites with a pair of moderate, yellowish, submedian spots, wider on second and almost forming a band interrupted on middle line; covering these spots is silvery dust, which on third and fourth extends their full length and on to forelegs of fifth, thus forming stripes; in male the yellow spots are hardly apparent, but silvery stripes from tergite 3–5 present; male terminalia and venter ferruginous-black; oviscape shining black and black pubescence, short, about as long as fifth and the very short sixth tergites together; end of ovipositor brown.

Trirhithrum albonigrum (Enderlein)

Ceratitis albonigra Enderlein, 1911, *Zool. Jahrb. Syst.*, **31**: 410, Fig. A; 1920, *id.* **43**: 351. Bezzi, 1913, *Bol. Lab. Zool. Portici*, **7**: 24.
Trirhithrum albonigrum (Enderlein) Bezzi, 1918, *Bull. ent. Res.*, **8**: 238; 1924, *id.* **15**: 105; 1923, *Ann. Mus. nat. Paris*, **29**: 530. Munro, 1935, *Bull. ent. Res.*, **25**: 478.

UGANDA: Ruwenzori, Mpanga Forest, *c.* 4000 ft., xii.1934–i.1935 *F. W. Edwards*, 1 ♀.

This specimen agrees closely with Enderlein's description and may be considered the same species. No band of yellowish pubescence is, however, apparent at the suture on dorsum of thorax, or it may be only in the male; further, the medial band on the wing is practically absent, being represented by a pale infuscation only.

The species was described from Cameroun, and is recorded from French Congo and from Spanish Guinea.

Trirhithrum notandum sp. n.

Allied to *T. coffeae* Bezzi and *T. nigerrimum* Bezzi, the sexes showing a strong wing-pattern dimorphism; the pattern is more like that in *nigerrimum*, but in the male differs in having clearly defined hyaline indents in the anal region, in the female by the definite separation of the lower part of the basal band from the anal cross-vein, the free cubital and the more irregular marginal.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*). Holotype ♂, allotype ♀, 2 ♂ paratypes.

Length, ♂ about 3·3 mm., ♀ about 3·5 mm.; wing, ♂ 3·7 mm., ♀ 3·5 mm.

Head: length, height, width, 4:7·5:10, flattened behind, not very prominent below, mainly black, brown in female, above, yellow behind vertex and shading to yellow below; frons yellow, blackish brown on hind third, and black ocellar dot; 0·3 width of head, slight yellow pubescence, 2 lower, 2 upper orbital bristles, ocellars strong; lunule inconspicuous; antennae 0·6 face, light chestnut, arista long plumose; face flat, yellow on lower, blackish on upper half; palpi and proboscis yellow, brown in female.

Thorax black with ferruginous tinge, more decidedly black in female; humeri more or less yellowish peripherally, pleural sutures yellowish, with small yellow spot just below notopleural bristle, the black, slightly swollen scutellum with a double spot at sides and a pair of apical yellow spots, these spots stronger in female; pubescence on dorsum much rubbed, white with fairly thick dust on middle, black on shining black margins, entirely black in female; pleural pubescence black, yellow on pteropleura; halteres yellow with brown knob; legs, femora coloured as dorsum of thorax, inner ends of tibiae darkened, hind ones most so, legs otherwise yellow, in female mid and hind tibiae also black; wing, male (Fig. 7) almost entirely blackish brown, stigma yellowish, a pale margin round costa, widening and almost hyaline to include outer part of second posterior cell, outer end of third and touching outer end of discal cell, the middle part of anal cell also hyaline, slight basal streaks present; female (Fig. 8) with a striking pattern, the free cubital, the basal narrow below and separate from the anal cross-vein and the deeply scalloped marginal may be noted.

Abdomen black with black pubescence and a faint, but rather wide pair of irregular, submedian, silvery stripes from second to fourth segments inclusive, in female thinly dusted over hind margin of second segment, on middle portion of third and a little on middle of fourth; male genitalia ferruginous; oviscape short, 0·5 mm., flat in specimen, black with black pubescence.

Trirhithrum transiens sp. n.

A small species with narrower wing; basal streaks are well developed and the pattern is, in this respect, somewhat between that of *T. viride* Munro, in which there is a more definite humeral band and the streaks less apparent, and that of *occipitale* Bezzi in which the wing-base is largely black. Otherwise the pattern is rather like that of *Trirhithromyia lycii* (Coq.) as there is a well-developed medial band; however, in this species the cubital is united to the marginal just beyond the upper cross-vein, while in *lycii* it is joined to the basal over the lower cross-vein.

UGANDA: Ruwenzori, Nyamgasani Valley, 8000–9000 ft., xii.1934–i.1935 (*D. R. Buxton*). Holotype ♂.

The specimen is in rather poor condition. Length about 3·4 mm.; wing 3·7 mm.

Head: length, height, width, 6:8:10; posteriorly brown, postgenae moderate; frons about 0·4 width of head, flat, a little prominent before eyes, yellow with blackish tinge behind, vertical plates blackish, ocellar dot and vertex black, very slight pale yellow pubescence in middle, bristles moderate, 2 lower, 2 upper orbitals; lunule inconspicuous; antennae yellow, slightly longer than short face, arista short plumose; face, parafacials narrow, genae wider, palpi and proboscis brown; epistome with row of strong setulae on sides; genal bristle moderate.

Thorax dorsum black but much damaged by pin; there seems to be a broad, median dusted stripe, with possible white pubescence, that on sides black; pleura yellow, brown on hypopleural region with a single hypopleural spot; middle sternite black; scutellum slightly convex, shining black with yellow spot on each side, 4 bristles; hind portion of black postscutellum with some silvery dust; legs yellow; squamae brownish with brown margins; halteres light brown; wing (Fig. 6): basal streaks well developed, marginal band united to basal, cubital originating from marginal a little before junction of marginal to basal and just outside upper cross-vein, medial strong.

Abdomen black with black pubescence; tergum 2 with band of silvery dust on hind margin, 3 with rather inconspicuous brown dust on middle half and a small silvery spot on hind edge on each side of this, 4 with brown dust narrowly on fore edge, otherwise silvery dusted, 5 black with some brown dust on middle of fore edge; genitalia brown.

Trirhithrum overlaeti Munro

Munro, 1935, *Bull. ent. Res.*, **25**: 477. Hering, 1942, *Mitt. zool. Mus. Berl.*, **25**: 291.

UGANDA: Budongo Forest, 7–8.ii.1935, 1 ♀; Ruwenzori, Kilembe, 4500 ft, xii.1934–i.1935 (*F. W. Edwards*), 1 ♀.

The male type has a wing-length 4·5 mm. The Budongo female is rather larger, 5·2 mm., oviscape 1·0 mm.; the Kilembe female wing-length 4·5 mm., oviscape 0·75 mm.; oviscape black with black pubescence. Antennae yellow in male, browner in these two females.

Trirhithrum homogeneum Bezzi

Bezzi, 1924, *Bull. ent. Res.*, **15**: 105, 108. Munro, 1935, *Ann. Mus. nat. Hung.*, **29**: 135, Fig. 4; 1935, *Bull. ent. Res.*, **25**: 480.

UGANDA: Ruwenzori, Fort Portal, 4.xii.1934 (*F. W. Edwards*), 1 ♂.

A specimen in good condition.

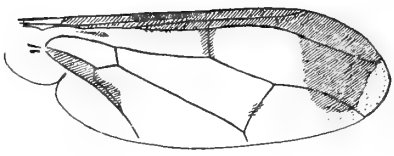

FIG. 1.—*Dacus croceus.*

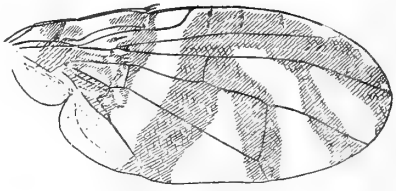

FIG. 2.—*Clinotaenia atlas.*

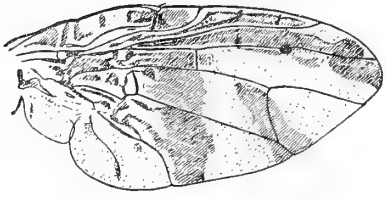

FIG. 3.—*Pardalaspis edwardsi.*

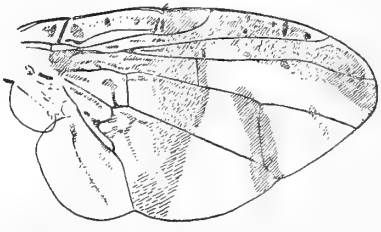

FIG. 4.—*Pterandrus tripteris.*

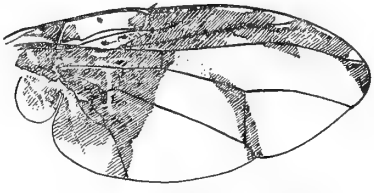

FIG. 5.—*Trirhithrum micans.*

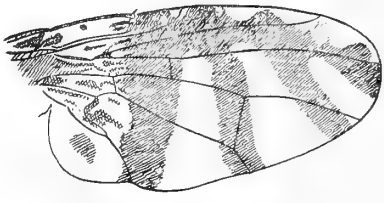

FIG. 6.—*Trirhithrum transiens.*

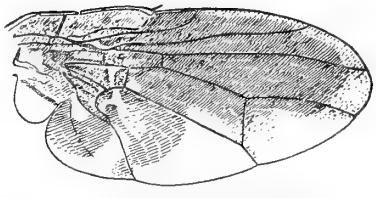

FIG. 7.—*Trirhithrum notandum* ♂.

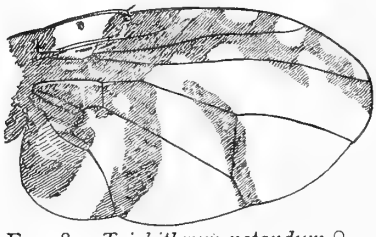

FIG. 8.—*Trirhithrum notandum* ♀.

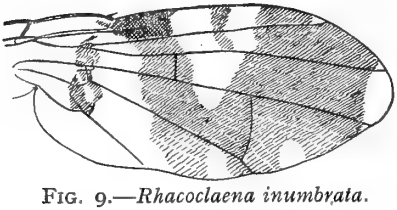

FIG. 9.—*Rhacoclaena inumbrata.*

FIG. 10.—*Ocnerioxa secata.*

Trirhithrum leucopse Bezzi

Bezzi, 1918, *Bull. ent. Res.*, **8**: 240; 1924, *id.* **15**: 106, 108. Munro, 1935, *Bull. ent. Res.*, **25**: 486.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*), 1 ♂.

In this specimen there is a pair of small yellow spots just below the tip of the scutellum.

Ptiloniola neavei Bezzi

Bezzi, 1918, *Bull. ent. Res.*, **8**: 247; 1924, *id.* **15**: 109.

UGANDA: Ruwenzori, Namwamba Valley, 6500 ft., xii.1934–i.1935 (*F. W. Edwards*), 1 ♂, 2 ♀.

PTEROPE gen. n.

In considering this new genus, the type species *Pterope rubens* runs to *Hemilea* Loew in the tables given both by Hendel, 1927, and by Shiraki, 1933. The reason for this is that the dorso-central bristles are before the anterior supra-alars. Further, in this character it differs from African genera such as *Afrocneros* Bezzi, *Ocnerioxa* Speiser, and *Rhacoclaena* Loew. Besides, as the dimidiate wing-pattern of *Hemilea* appears to be given something of generic value, the peculiar pattern in the new species may be noted.

The following characters are recorded:

Head: occiput flat above, moderate below; frons about 1·5 times width of an eye, 3 inferior and 2 superior orbitals, ocellars strong, outer verticals very long; lunule moderate; antennae short, arista pubescent, face short.

Thorax: dorso-centrals before anterior supra-alars, sternopleural, pteropleural and 2 mesopleurals, 4 scutellars, no scapulars and no propleurals; scutellum flat on top, triangular; wing, upper cross-vein close to lower, outer angles of discal cell right angles, the lower cross-vein gently curved outwards; point of anal cell moderate; outer end of first posterior cell slightly narrowed outwardly and with apical whitish spot (almost absent in female).

Abdomen about parallel-sided, the fifth and combined first and second tergites lengthened.

Type species: the following new species, *Pterope rubens*.

Pterope rubens sp. n.

UGANDA: Ruwenzori, Namwamba Valley, 6500 ft., xii.1934–i.1935 (*F. W. Edwards*). Holotype ♂, allotype ♀, 2 paratypes.

Length, male, 6·0 mm., of wing, 5·5 mm.; female, 7·5 mm., of wing, 6·0 mm. A somewhat dull-coloured, reddish-yellow species.

Head: reddish, yellow on lower parts; bristles blackish brown, the occipital row more yellowish; frons a little more than one-third width of head, narrowed

in front, about as long as width at vertex, ocellar dot black, slight black pubescence; lunule almost semicircular sunken in specimens; antennae short, about two-thirds length of short face, second joint rather large, third short, oval, greatest width about three-fourths length, broadly rounded at end, arista short pubescent; face hollowed, epistome not prominent; cheeks linear, genae narrow; oral opening large, oval; eyes large in profile.

Thorax: reddish yellow, dorsum with slight whitish dust and blackish pubescence, which is longer on pleura and on sternites, yellow; bristles: lower mesopleural weak, the dorso-centrals about midway between suture and line of anterior supra-alars; scutellum like dorsum, more yellow on sides and behind, the apical bristles each on a black spot; halteres yellow; legs yellow, front femora with row of 4 strong bristles below; wing (Fig. 11 ♂) pattern blackish, the lighter parts brownish, with large hyaline spots and the white spot at end of first posterior cell. In the female, the pattern is more diffuse and brownish; the two hyaline spots in first basal cell are conspicuous but the apical row is narrower than in male and the apical white spot at end of first posterior cell only just visible.

Abdomen brownish yellow, yellow in female, with black, strongly shining pubescence; it is apparently not wider before the middle; apical bristles strong; genitalia reddish; venter rather black; oviscape chestnut with black tip; 1·5 mm. in length, rather acuminate, but flattened in specimens.

Aethiothemara fallacivena (Enderlein) var. **trispila** Bezzi

Themara fallacivena Enderlein, var. *trispila* Bezzi, 1923, *Ann. Mus. nat. Paris*, **29**: 577; 1924, *Bull. ent. Res.*, **15**: 108.
Aethiothemara fallacivena (Enderlein) var. *trispila* Bezzi. Hendel, 1928, *Ent. Mitt.*, **17**: 356.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*), 1 ♀.

Aethiothemara striata Hendel

Hendel, 1928, *Ent. Mitt.*, **17**: 357.

UGANDA: Ruwenzori, Namwamba Valley, 6500 ft., xii.1934–i.1935 (*F. W. Edwards*), 2 ♂, 2 ♀.

Described on a female from Uganda, the male is similar.

Coelotrypes nigriventris Bezzi

Bezzi, 1924, *Bull. ent. Res.*, **15**: 114.

UGANDA: Mbarara, 15.xi.1934 (*F. W. Edwards*), 1 ♂.

Described on a female from Sudan, this male agrees with the description. Length 5·0 mm.; wing 4·25 mm.; frons with some pale pubescence; terminalia shining black.

Rhacoclaena inumbrata sp. n.

Larger but very like *R. pulchella* Bezzi, of which it may be a dark form; it is distinguished by the heavily marked wing-pattern and the black femora.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*). Holotype ♂.

Length and of wing, 6·0 mm.

Head as in *pulchella*, posteriorly with a shining black, irregularly triangular patch on either side above; third antennal joint broken off, the arista may possibly be pubescent (in *R. permagna* Munro which has a somewhat different and less heavy wing-pattern, the arista in plumose); bristles denuded, 1 upper and 3 lower orbitals; eyes brown in dry specimen.

Thorax as in *pulchella*; pleura brownish, sternites more yellowish; scutellum yellow, slightly brownish on sides; bristles black, not yellow at ends; wing (Fig. 9), a moderate anal band, a broad band from stigma over upper cross-vein to middle of third posterior cell and a very wide apical band, the two united in discal cell, the large costal indent has a short stripe across the marginal and submarginal cells, there is a small indent in second posterior cell and the usual apical whitish spot across the end of the first posterior cell, just crossing the veins above and below; third vein setulose to middle of first posterior cell; upper cross-vein at middle of discal cell; legs yellow, femora black except at ends, middle pair most strongly black, middle and hind tibiae blackish on inner third.

Abdomen shining black, a yellow stripe on middle third from base to hind edge of tergum 4; pubescence black; tergum 5 as long as 3 and 4 together; genitalia black, appendages yellow.

Rhacoclaena major Bezzi

Bezzi, 1924, *Bull. ent. Res.*, **15**: 109, 110; 1924, *Ann. S. Afr. Mus.*, **19**: 487, Plate XIII, Fig. 36. Munro, 1929, *Ann. S. Afr. Mus.*, **29**: 5.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 1 ♂. Similar to South African specimens.

[Ocnerioxa secata sp. n.]

Allied to *Ocnerioxa interrupta* Bezzi, in which the arista is micro-pubescent, in this species, short plumose; in the wing-pattern of *interrupta* there is a wider transverse hyaline bar across the outer part of the wing, and a narrow, abbreviated stripe along the lower cross-vein; here the transverse hyaline bar is narrow with a short extension into the upper, outer end of the discal cell, and a wide infuscation over the lower cross-vein.

BRITISH CAMEROONS: Mt. Cameroon, Musake, 6350 ft., 13.i.1932 (*M. Steele*). Holotype ♀ (taken sweeping).

Length 5·8 mm.; wing 5·5 mm.

Head: length, height, width, 6:8:10; eye large, rounded; frons and upper two-thirds of occiput brown, face and below yellow; posteriorly flat, postocular row of bristles fine, black; frons flat, width 0·8 length, 0·4 width of head, slight fine, black pubescence, 2 upper, 2 lower orbitals, ocellars absent; lunule short; antennae 0·8 face, second joint small, third rounded at end, arista short plumose; face: epistome slightly prominent, parafacials narrow, genae 0·25 height of eye; proboscis short.

Thorax: dorsum to upper edge of notopleura very dark brown, shining, scutellum and postscutellum paler, the latter still paler in middle, lower parts of thorax yellow; pubescence fine, black, short, bristles normal, black, one mesopleural, dorso-centrals behind anterior supra-alars, inner and outer scapulars moderate; scutellum flat, triangular, apex rounded, 4 bristles, apicals 0·9 basals; squamae brown; halteres blackish; legs yellow, fore femora with row of bristles below; wing (Fig. 10): third vein with close-set setulae above, more scattered along length below.

Abdomen narrow, very dark brown, almost black, shining, middle portion of terga yellow from base to tergum 4, pubescence black; oviscape 1·25 mm., flattened in specimen, black as also pubescence; venter: sternites brown, membrane yellow.

BARYGLOSSA

Bezzi, 1918, *Bull. ent. Res.*, **8**: 244.

This curious and strongly marked genus (type species: *Baryglossa histrio* Bezzi) shows a remarkable combination of characters. Differences from other African genera include the angular head, projecting facial keel, the remarkable proboscis and the development of setulae between the pseudotracheae, the apparently jointed palpi and the 6 scutellar bristles. Its nearest allies appear to be *Blepharoneura* Loew and *Hexacinia* Hendel.

Unfortunately pertinent data on the proboscis and palpi are scanty, even of *Baryglossa*: Bezzi says little more than "palpi dilated at end" and "proboscis exceedingly incrassated". Of the neotropical *Blepharoneura* I have a specimen of *B. femoralis* v.d. Wulp kindly sent to me by Dr. Hering. In this the proboscis resembles that of *Baryglossa*, but it is not possible to be sure of the presence of setulae between the pseudotracheae; the palpi appear normal. Apart from this, the third and fifth veins on the wing are bristly. The oriental *Hexacinia* was erected by Hendel (1914, p. 82) only in generic tables, with *Acinia stellata* Macquart as genotype; he does not seem to have given any more detailed description, nor, incidently, is there one of Macquart's *stellata*. In 1915 Hendel (p. 459) described *Hexacinia palpata*, a Chinese species, and it is to this species that

Baryglossa has some resemblance, since he states "die Taster sind ganz merkwürdig gebildet, scheinbar zweigliedrig". Shiraki (1933, p. 317) and Zia (1937, p. 141) both "redescribe" *Hexacinia*, but apparently on *palpata*, and Zia admits that this may be generically different from *stellata* Macquart. Both say "palpi distinctly two-segmented", but neither they nor Hendel seem to have noticed anything remarkable in the proboscis.

Species of *Baryglossa* are dark brown or more or less yellow below, and more or less extensive black markings on dorsum of thorax and abdomen; the integument generally has a varnished appearance.

Head (Figs. 16, 17) angular, frons, epistome and facial carina prominent; the epistome in the middle is drawn up to the short, concave carina, so that the middle of the face is only about half the length of the parafacials at the lower end of which the hinge with the facial plate forms a conspicuous, elongate pit; antennae rather longer than middle of face, third joint large and rounded, arista bare; proboscis: it is not easy to see what is the exact shape of the proboscis from available specimens, and there are not enough to make a dissection in potash. The basal portion is relatively narrow, but the haustellum and labella appear to have combined to form a massive, sausage-like structure; the mentum appears as a large, half-cylinder while the membranous anterior aspect is flattened or sunken in the dried specimens. The labella do not appear to be normally hinged to the haustellum, although some up and down movement is probable; they look more like an apical prolongation of the haustellum, and open out more posteriorly or postero-ventrally. Further, and probably in most species, there are rows of tiny spinules between the pseudotracheae, the points of the spinules directed outwardly from the central line; the palpi are constricted at about the middle so as at least to appear two-jointed, the basal portion narrower and more parallel-sided, the outer rounded or oval and flat; it is finely pilose with some dark setae. The whole has the appearance of an inverted antenna without the arista. There does not seem to be a joint or hinge at the constriction, and it is not possible to say if there is any movement here in the live fly. Bristles normal, fine, black; 2 upper and 2 lower orbitals, ocellars strong, on both sides of epistome longer bristle hairs about as long as genal bristle.

Thorax: bristles normal, scapulars present, middle ones may be weaker or not much differentiated from longer bristle hairs; sometimes a second, apparently supernumerary, humeral; dorso-centrals well behind anterior supra-alars; 2 mesopleurals, and a third before vertical suture; 6 scutellars, mid pair weaker; wing, third vein with somewhat long but rather sparse setae; costal bristle absent; microtrichiae long, giving the wing-surface a distinctly hairy appearance.

Abdomen: oviscape conical, where the flat aculeus is exerted, the triangular apex is seen to be armed with a few minute spines on the margins.

Guide to Species

1. Wing-pattern with numerous, small, hyaline spots, two rows each in submarginal, first posterior and discal, and one in third posterior, in addition to usual marginal spots and indents; scutellum unspotted, very long (*sec.* Bezzi) *bequaerti* Bezzi
– Wing-pattern without such rows of hyaline spots 2
2. Mesonotum entirely yellow 3
– Mesonotum with strongly marked (sometimes less so) black stripes 4
3. Apex of wing with rather faint, broadly reticulate pattern; the wide, posterior, hyaline indent into discal cell with a very faint reticulate pattern; outer portion of palpi narrower than third antennal joint . . *tersa* Munro
– A narrow infuscated stripe along costa at end of submarginal cell and somewhat over third vein; the mainly hyaline apex of wing weakly infuscated seen obliquely; three well-defined hyaline indents across third posterior cell; outer portion of palpi wider than third antennal joint . . *oldroydi* sp. n.
4. Wing-pattern heavily marked, almost entirely infuscated to base and a well-marked apical pattern of wide, apical rays . . . . . *histrio* Bezzi
– Apical pattern reduced, the apex more or less hyaline, or apical rays pale and evanescent; pattern on hind margin also reduced, leaving a wide, hyaline indent into discal cell and only scattered, infuscated spots . . . 5
5. Base of wing hyaline (or barely infuscated), apex with remnants of apical pattern, leaving isolated infuscated spots on costa . . . . . *trulla* sp. n.
– Infuscation extended into base along basal cells 6
6. Main pattern ending a little past line of lower cross-vein and, united to main pattern, an infuscated stripe along costa to end of fourth vein . *emorsa* sp. n.
– Pattern extending well beyond line of lower cross-vein, at end of submarginal cell a disconnected, narrow, infuscated stripe to just over end of third vein *mimella* sp. n.

[Baryglossa bequaerti Bezzi]

Bezzi, 1924, *Rev. zool. Afr.*, **12**: 14.

Specimens not seen; only the type ♀ from the Belgian Congo known.

[Baryglossa tersa Munro]

Munro, 1939, *J. E. Afr. & Uganda Nat. Hist. Soc.*, **14**: 8, Fig. 2.

I have a male paratype and another male from the Chyulu Hills, Kenya (*V. G. L. van Someren*).

Palpi: outer joint relatively narrower, as long as third antennal joint, but 0·6 its width; proboscis: rows of spinulae are well developed between the pseudotracheae.

This is the only species of which anything is known of the biology; van Someren stated that the larvae were in the flowers of a cucurbitous plant.

[Baryglossa oldroydi sp. n.]

British Cameroons, Kumba, 13.x.1949 (*H. Oldroyd*). Holotype ♀.

Length 5·7 mm.; wing 4·3 mm.; oviscape 1·0 mm.

Head and appendages yellow, only flagellum of arista brown and small,

black ocellar dot; head (Fig. 16), length, height, width, 6:6:10; frons square, 0·45 width of head, slight black pubescence, 2 upper, 2 lower orbitals; antennae a little longer than middle of face, third joint large, oval, arista bare; palpi large, prominent, outer portion larger than third antennal joint, flat, wide, leaf-like; proboscis: combined haustellum and labella massive, rows of spinulae between pseudotracheae.

Thorax yellowish brown below, darker brown on dorsum, scutellum yellow with small apical spot, postscutellar area black; pubescence pale, some black on anterior edge of dorsum; bristles normal, outer scapulars present but inner not differentiated, 1 humeral, 6 scutellars; legs yellow; halteres brown; wing (Fig. 12): third vein with long, fine setulae to middle of first posterior cell, costal bristles not developed; scutellum triangular, convex, but not strongly so.

Abdomen polished, yellow at base and on middle, sides black, on tergum 3 on either side a black tongue extends inwards for about one-third of width, on tergum 4, sides one-third black with a narrow tongue on each side not quite meeting on median line, leaving a yellow, hour-glass patch on middle of tergum, tergum 5 black except a small yellow spot on middle of anterior margin and a faint streak below, tergum 6 and oviscape black, pubescence black, shining brown; oviscape conical, in specimen somewhat flattened at base, 0·25 wing-length, 0·45 pre-abdomen; membranous portion and aculeus light ferruginous, latter with spinulae on sides of flat apex (Fig. 18).

Baryglossa histrio Bezzi

Bezzi, 1918, *Bull. ent. Res.*, **8**: 245, Plate V, Fig. 12.

Belgian Congo, Mayumbe (*R. Mayné*), 1 ♂. Uganda: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*), 1 ♀.

The male had apparently been in alcohol and had become bleached. The female seems teneral and somewhat under-coloured, but agrees fairly well with the description. There is an additional bristle on the humerus, and three mesopleurals. The dorsal thoracic stripes are moderate, the median pair united before the scutellum; the narrow notopleural black stripe is pale on the lower part of the humerus; the apical scutellar spot does not reach the middle of the scutellum. The wing-pattern shows minor variations from Bezzi's figure, and is not so heavy. The abdomen is in such poor condition that the colour and pattern cannot be observed; the sixth tergum about one-third length of fifth; oviscape flattened in specimen, is blackish with black pubescence and about as long as third to sixth terga together.

Baryglossa trulla sp. n.

Uganda: Ruwenzori, Mobuku Valley, 7300 ft., xii.1934. Holotype ♂; Fort Portal, 4.xii.1934, allotype ♀ and 2 ♀ paratypes; Kilembe, 4500 ft., xii.1934–

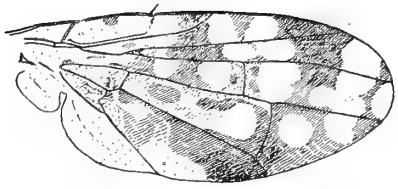

FIG. 11.—*Pterope rubens*, ♂.

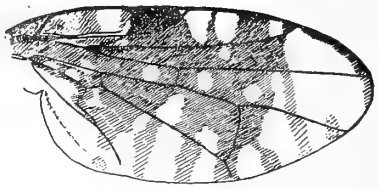

FIG. 12.—*Baryglossa oldroydi*.

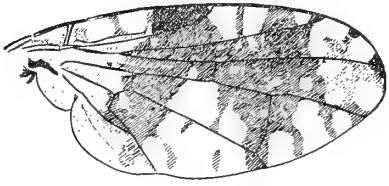

FIG. 13.—*Baryglossa trulla*.

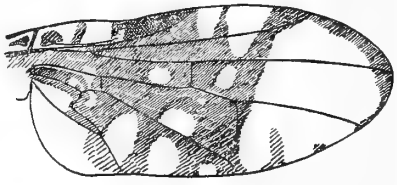

FIG. 14.—*Baryglossa emorsa*.

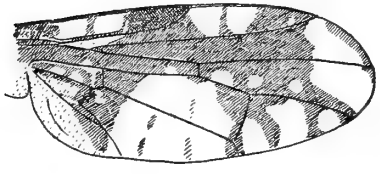

FIG. 15.—*Baryglossa mimella*.

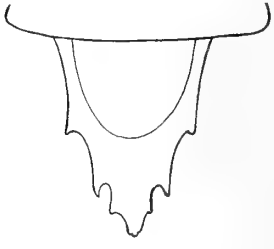

FIG. 18.—*Baryglossa oldroydi*, tip of aculeus.

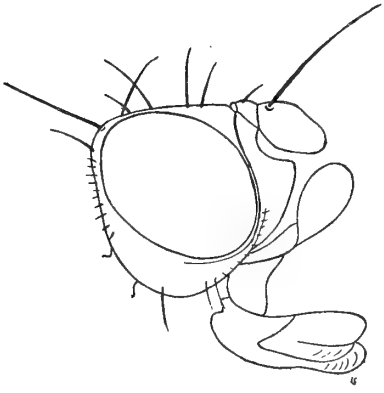

FIG. 16.—*Baryglossa oldroydi*.

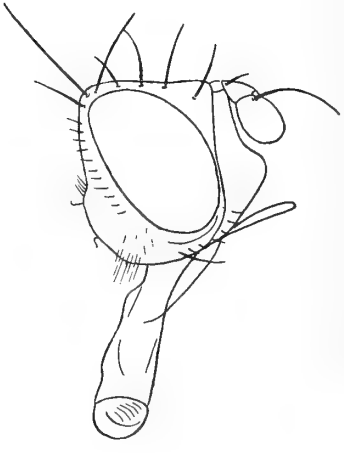

FIG. 17.—*Baryglossa trulla*.

i.1935, 2 ♂ paratypes (*F. W. Edwards*). ERITREA: Asmara, Bet Gherghis, I.v.1950 (*G. De Lotto*) (in S. Afr. Nat. Coll. Ins.), 1 ♀ paratype.

Length and of wing, ♂, 5·5 mm.; ♀, 6·5 mm., wing 5·25 mm.

Head (Fig. 17) brownish yellow, posteriorly broadly black except on orbits; frons about 0·5 head, square, some black pubescence, ocellar dot black; lunule inconspicuous; antennae blackish, bare arista black, yellow at base; proboscis relatively stout and short, spinulae between pseudotracheae not observed, only rows of oblique, smoothly rounded ridges between pseudotrachaea on outer two-thirds of labella; these may be flattened spinulae as some do appear posteriorly; outer portion of palpi oval, slightly longer than basal piece.

Thorax strongly shining; dorsum: black stripes broad and strong, median pair separated by narrow yellow stripe and do not unite at either end, outer pair interrupted at suture, notopleural stripe strong; pubescence pale. Pleura and sterna black, the sutures more or less yellow, but propleura and across top of mesopleura yellowish, extending across wing-base and upper part of inner hypopleural spot; pubescence pale; scutellum moderately swollen, yellow with black median stripe from narrow apex widening towards but not always reaching base; postscutellum dull black. Bristles black, thin, mid-scapulars weak or not differentiated, outer thin and small, two humerals, one weak, dorso-centrals a a little before line of outer posterior alars, 3 mesopleurals, rarely a fourth; legs and halteres yellow; wing-pattern (Fig. 13) somewhat like that of *B. histrio*, but outer reticulation variable and much reduced, or almost absent with a few spots remaining, base practically hyaline. Abdomen reddish chestnut, sides broadly shining black which extends across the middle of the terga, but not meetings on the median line. Genitalia black.

Abdomen shining, base yellow, more or less chestnut on middle, sides broadly black, on tergum 3 a pair of moderate, submedian, black spots on anterior half narrowly joined to lateral black, 4 black with a narrow, obscure median stripe on anterior half, on posterior half almost to lateral margins, 5 black with a median ferruginous spot wider behind, 6 very short, black. Oviscape robust, 1·75 mm., about as long as pre-abdomen or slightly longer; proximal three-fifths a wide tube somewhat flattened at base, narrowing apically to a narrow, conical tube; shining black with black pubescence.

The female from Eritrea (in Pretoria collection) may be a pale specimen; it has a wing-pattern like Fig. 13, but the paler infuscation at the outer end has almost vanished. Further, the dark, dorsal thoracic stripes have almost disappeared and are mainly represented by disconnected, somewhat elongate spots on the dorso-central lines.

Baryglossa emorsa sp. n.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*). Holotype ♂.

Length about 5·0 mm.; wing 5·0 mm.

Head brownish yellow, more elongate; length, height, width, 9:6:10; posteriorly mostly black above, but yellow behind vertex; frons: width 0·75 length, rather less than 0·5 width of head, blackish on fore half and ocellar dot black, 1 upper, 2 lower orbitals, with 2 small supernumeraries on left side, ocellars long and strong; antennae with blackish tinge; face yellow, grooves translucent and shining, keel strongly projecting before eye about three-fifths height of eye which is oval and somewhat oblique, parafacials and genae narrow.

Thorax: dorsum mainly black, the broad, black, lateral stripes not well-defined and only separated by indistinct, yellowish streaks, suture and lateral stripe yellow, humeri and upper part of mesopleura obscurely blackish, propleura and sterna yellow, becoming blackish behind, posterior portions of sterna and pleura black; dorsum pubescence apparently blackish, but strongly shining yellowish; scutellum yellow with narrow, black, median stripe to apex; median pair of bristles half length of others, the apicals close together; bristles black, 3 mesopleurals, the second humeral small, mid-scapulars weak or practically absent, dorso-centrals near prescutellars; legs yellow; halteres with blackish knob; wing (Fig. 14).

Abdomen shining black, more or less ferruginous in middle; it is apparently deformed, the fourth tergum broken in middle, not quite meeting over forwardly produced middle of fifth tergum, the third with its posterior margin broadly produced backwards; pubescence blackish but strongly yellow-shining. Terminalia not observed owing to condition of specimen.

Baryglossa mimella sp. n.

Uganda: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*). Holotype ♂; West Ruwenzori, 8000–9000 ft., vii.1948 (*V. G. L. van Someren*), paratype ♂. Kenya: Nyeri, x.1948 (*V. G. L. van Someren*), allotype ♀.

Length, ♂ 4·5 mm., ♀ 5·8 mm.; wing, ♂ 4·5 mm., ♀ 6·0 mm.

Head: length, height, width, 8:6:10; yellowish posteriorly, ♂ largely black, broadly yellow behind vertex and a narrow median streak to neck, yellow below, ♀ also yellow behind eyes, leaving a Y-shaped black mark on each side; eye oval, oblique; frons square, 0·5 width of head, brownish or blackish brown, broadly yellow on sides, ocellar dot black, slight, black, shining pubescence, bristles black, 2 lower, 2 upper orbitals; face light chestnut, shining, especially in the grooves, short and concave in middle, the up-turned epistome ("snout") strongly projecting, parafacials and genae narrow; palpi, basal part flat, blackish, apical part of about equal length and width, brownish, yellow pubescence and some fine, black setulae; proboscis yellow, haustellum plus labella massive, between the pseudotracheae rows of rather stout, close-set, anteriorly directed spinules.

Thorax shining chestnut, on dorsum a pair of wide black stripes on each side, the outer barely interrupted at suture, not united behind, laterally yellow from upper part of humerus across wing-base to scutellum, a brown stripe from lower part of humerus and along edges of mesopleura and notopleura; dorsal pubescence strongly brown-shining, appearing black on the black stripes; pleura and sterna yellow, hypopleural region and postscutelum black; scutellum yellow, broadly black on disc to between and below apical bristles; bristles: second humeral absent, scapulars not apparent, or outer ones weak, 3 mesopleurals, one being before the vertical suture, an additional bristle outside prescutellars and behind dorso-centrals, mid-scutellars barely half length of other four; legs yellow, translucent; halteres yellow; upper squama blackish with blackish rim and long marginal fringe, the lower narrow; wing (Fig. 15) pattern brown, stigma black, third vein fully setose.

Abdomen shining black, broadly yellow on middle, the yellow widened to hind margin of each tergum, widest basally; pubescence black, strongly shining; oviscape conical, 1·4 mm., shining black, black pubescence, middle membrane and aculeus ferruginous, the triangular tip of aculeus with 3 tiny spines on each side and at extreme tip, 3 closely set, very minute spines.

Trypeta (? péringueyi Bezzi)

Phorellia péringueyi Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 488, Plate XIII, Fig. 37: 1924, *Bull. ent. Res.*, **15**: 111. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 51; 1929, *id.* No. **6**: 13; 1939, *J. E. Afr. & Uganda Nat. Hist. Soc.*, **14**: 10.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 1 ♂, 1 ♀; Namwamba Valley, 6500 ft., i.1935 (*F. W. Edwards*), 1 ♂, 1 ♀; Kigezi District, Kanaba, 7800 ft., xi.1934 (*F. W. Edwards*), 1 ♀.

Of the above references, the first two, of Bezzi, are without doubt *péringueyi*, but the others, Munro, may be mixed. The five specimens noted were originally identified as *péringueyi*; however, in view of the large amount of material received since, this now seems doubtful and nothing further can be said until a critical study of all the specimens has been made. Munro 1939 is probably not *péringueyi*, but another species and actually the one represented by the present specimens.

In addition, the correct use of the name *Trypeta* is unsettled. Here it is used in the sense of Coquillett 1910 and Hendel 1927, with *artemisiae* F. as genotype. Questions to be settled are: whether Rondani's 1870 fixation of *Musca arctii* DeG. (*-tussilaginis* F.) as genotype is to be accepted as argued by Collin 1937; whether Latreille's 1802 so-called fixation of *cardui* L. for *Euribia* is valid; whether *Trypeta* may be a synonym of *Euribia*, the settling of which, in turn, may depend on the elimination of the Meigen 1800 names.

Finally, it may be possible that the African species concerned are not congeneric with *artemisiae* under whatever genus it may eventually be placed.

TERELLINAE

Craspedoxantha marginalis (Wiedemann)

Tephritis marginalis Wiedemann, 1818, *Zool. Magaz.*, **1** (2): 47.
Terellia marginalis (Wiedemann) Macquart, 1943, *Dipt. ex.*, **II** (227).
Trypeta marginalis (Wiedemann) Wiedemann, 1830, *Aussereurop. zweifl. Insekt.*, **2**: 382. Loew, 1861, *Berl. ent. Zeit.*, **5**: 255; 1862, *id.* **6**: 90. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131. Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 140.
Craspedoxantha marginalis (Wiedemann) Bezzi, 1913, *Mem. Ind. Mus.*, **3**: 156; 1918, *Bull. ent. Res.*, **9**: 17; 1924, *id.* **15**: 117; 1924, *Ann. S. Afr. Mus.*, **19**: 505, Plate XIII, Fig. 50. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 52; 1929, *id.* No. **6**: 13; 1935, *id.* No. **9**: 31. Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 264.

KENYA: Mt. Elgon, Heath Zone, 10,500–11,509 ft., ii.1935 (*F. W. Edwards*), 1 ♂.

The species infests the flowers of various Compositae (Munro, 1925, 1929, 1935) and has become a pest in gardens attacking Barberton daisy and *Zinnia*, the flowers of the latter becoming deformed.

ACIURINAE

An attempt was made (Munro, 1947, *Mem. ent. Soc. S. Afr.*, 1) to work out the relationships of a series of genera and species which, as an hypothesis, were regarded as an intermediate group between the Tephritinae and the Trypetinae (Ceratitinae, auctt.). That this may not be quite correct is possible and there may be two or more specialised groups or offshoots, perhaps biological groups that might be less directly related than would be apparent from the above study. Needless to say, a more extended study on more abundant material is needed.

It is to be regretted, too, that while the research recorded was in progress, various new genera and species, coincident with some erected in the Memoir, were published in Germany during the Second World War. These did not become available to the author till after the Memoir had been published. The more straightforward synonymy is corrected here, but some points must remain obscure for the present.

ACIURINI

Allotrypes maripilosa Munro

Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 92, Figs. 2, 3, 88, 89, 143.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 1 ♂ paratype.

Isoconia axilatra Munro

Munro, 1947, *l.c.*, **1**: 112, Figs. 13, 91, 154.

UGANDA: Ruwenzori, Katwe, 26.xii.1934 (*F. W. Edwards*). Holotype ♀.

Isoconia frondifer Munro

Munro, 1947, *l.c.*, **1**: 112, text Fig. 10f., g., Figs. 14, 155.

UGANDA: Ruwenzori, Katwe, 20.xii.1934 (*F. W. Edwards*), 1 ♀ paratype.

PARACIURA Hering

Paraciura Hering, 1942, *Mitt. zool. Mus. Berl.*, **25**: 284 (type species: *Aciura perpicillaris* Bezzi).

Biretmus Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 134 (type species: *Aciura perpicillaris* Bezzi) **(syn. nov.).**

Paraciura perpicillaris (Bezzi)

Aciura perpicillaris Bezzi, *Bull. ent. Res.*, **10**: 253, Plate XVIII, Fig. 4; 1924, *id.* **15**: 123; 1924, *Rev. Zool. Afr.*, **12**: 16. Munro, 1929, *Ann. S. Afr. Mus.*, **29**: 12.

Biretmus perpicillaris (Bezzi) Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 135, Figs. 25, 101, 105, 123, 167, 293.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 3 ♂, 2 ♀.

TEPHRACIURA Hering

Tephraciura Hering, 1941, *Boll. Soc. ent. Ital.*, **73**: 108 (type species: *Trypeta oborinia* Walker).

Jacotella Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 136 (type species: *Trypeta angusta* Loew) **(syn. nov.).**

PARASPHENISCOIDES Hering

Parasphenisco ides Hering, 1940, *Ann. naturhist. Mus. Wien*, **51**: 197 (type species: *Trypeta binaria* Loew).

Notoxesis Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 143 (type species: *Trypeta binaria* Loew) **(syn. nov.).**

Parasphenisco ides binaria Loew, var. adepta Munro

Spheniscomyia binaria (Loew) Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 516, Plate XIII, Fig. 65—as an unnamed var.

Notoxesis binaria (Loew) var. *adepta* Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 146, Fig. 173.

UGANDA: Kilembe, Ruwenzori, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 1 ♀.

CONIONOTA Munro

Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 147.

The type species is *quaternaria* Bezzi, and *quinaria* Bezzi, is also typical of the genus. Two others were included, *fracta* Munro (= *zernyi* Hering) and *reculta* Munro, but may be sufficiently distinct to be placed separately in *Afraciura* Hering which follows.

AFRACIURA Hering

Hering, 1941, *Ann. naturhist. Mus. Wien*, **51**: 197 (type species: *Afraciura zernyi* Hering).

[Afraciura zernyi Hering]

Afraciura zernyi Hering, 1941, *Ann. naturhist. Mus. Wien*, **51**: 198, Taf. XX, Figs, 5, 6.
Conionota fracta Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 151, Figs. 34, 178, 179 **(syn. nov.).**

No specimens taken on B.M. Expedition.

ELGONINA gen. n.

On account of the fine, black cephalic bristles, the absence of scapular bristles, and shining black abdomen, this new genus comes within the limits of the *Aciura* series. Allied to *Munroella* Bezzi, to which it is similar in general appearance, and shape of the head, especially the rather flared epistome; there are 2, not 3, lower orbitals; dorsum of thorax appreciably dusted, and the upper cross-vein nearer the middle of discal cell (in *Munroella* the upper and lower cross-veins are almost, at times quite, in line). If the species of *Elgonina* prove to infest flowers of Verbenaceae, a biological relationship would also be established, although these specimens were taken on (resting on) flowers of Compositae. There is also some resemblance to *Gymnosagena* Munro, but this has only one upper orbital and a very faint reticulate wing-pattern.

Head slightly angular, bristles fine, black, postorbitals few, 2 upper, 2 lower orbitals, ocellars moderate; frons about half width of head; lunule short; antennae about as long as face, arista pubescent; parafacials narrow, epistome somewhat prominent.

Thorax: dorsum, dust moderate; bristles normal, dorso-centrals near suture, 4 scutellars, apicals short and weak; legs normal; wing: third vein bare; no pattern, but wing appearing greyish owing to black microtrichiae, a few white microtrichial spots may be present; squamae, upper wide, lower narrow.

Abdomen polished black.

Type species: the following new species, *Elgonina refulgens*.

Elgonina refulgens sp. n.

KENYA: Mt. Elgon, 10,500–12,500 ft., ii.1935. Holotype ♂, allotype ♀, 7 ♂, 7 ♀ paratypes on flowers of *Conyza ruwenzoriensis*, 1 ♂ on *Erlangia* sp. (*F. W. Edwards*).

A black species.

Length, ♂ 3·0 mm., ♀ 3·5 mm.; wing, ♂ 3·5 mm., ♀ 3·6 mm.

Head not strongly oval, rather angular, but frons sloping; length, height, width, 6·5:7:10; posteriorly black, slight dust, clothing below fine, black,

postorbitals fine, black, only 3 or 4 with row of shorter setullae, other postoculars more brownish; frons flat, bare, yellow, blackened behind, ocellar dot and vertical plates black, dusted, and silvery dust narrowly along eyes about as long as wide, a little narrowed to the front; 0·5 width of head, bristles black or slightly brownish, 2 upper, 2 lower orbitals, ocellars moderate; lunule yellow, short, length 0·25 width; antennae nearly as long as face, first two joints yellow, third black, the black arista with fine, close-set pubescence; face concave, epistome somewhat prominent and widened laterally, parafacials and genae narrow, both slightly blackened yellow, genal bristles weak, pale; proboscis yellow, elongate, haustellum about as long as labella and 0·8 length of mouth-opening, palpi flat, oval, yellow, darker outwardly.

Thorax: black, rather shining, dorsum, dust moderate, brown, greyish on front edge, pubescence sparse, fine, pale brown or blackish; slight dust on pleura and sterna; bristles normal, black, only pteropleural pale brown, 1 mesopleural, dorso-centrals near suture, scapulars absent, but more or less pronounced, longer, whitish hairs or long pubescence may simulate weak mid-scapulars; sternal hairs pale brown, rather long and fine; halteres yellow; squamae yellow, upper wide, lower narrow; legs: coxae yellow or slightly blackened, femora polished black, outer ends yellow, tibiae yellow but moderately blackened, the hind pair black; wing (Fig. 19), veins brown, yellow at base, membrane with very slight yellowish tinge, the surface covered with rather long, dark microtrichiae, giving it a distinct, very light brown appearance; there are a few spots with colourless (or white) microtrichiae: a small one at inner third of costal cell, in marginal cell moderate at end of stigma and small at tip, a large, conspicuous, round spot at wing-tip; stigma brown, pale on inner side, at apex of wing a slight brownness from tip of marginal cell to just past tip of vein 4, but not around apical white spot on inner side; marginal ciliae rather long all around wing, even longer on alula and along subcosta; costal bristle not longer, but thicker than ciliae; third vein bare. Scutellum as mesonotum, short, rounded at end, moderately convex, 4 bristles, apicals small, 0·25 basals.

Abdomen and oviscape polished black, hind margins of tergites very narrowly ferruginous; pubescence moderate, fine, blackish, brown-shining; oviscape relatively large, flattened in specimens, 0·8 mm., about 0·3 wing-length, a little shorter than pre-abdomen.

Elgonina fuscana sp. n.

UGANDA: Kigezi district, Mt. Muhavura, 10,000–12,000 ft., xi.1934 (*F. W. Edwards*). Holotype ♀.

This specimen is quite like *Elgonina refulgens*, but there is no trace of any white, microtrichial spots on the wings; nor are the legs so black, the hind

tibiae only slightly black, the others hardly blackened. Oviscape flattened in specimen, shining black, with black pubescence, is rather longer, 1·4 mm., 0·4 wing-length. Length of specimen 3·0 mm.; wing 3·5 mm.

GYMNACIURA Hering

Gymnaciura Hering, 1942, *Mitt. zool. Mus. Berl.*, **25**: 284 (type species: *Aciura distigmoides* Hering).

Tanaosema Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 164 (type species: *Spheniscomyia neavei* Bezzi) **(syn. nov.).**

No species of *Gymnaciura* was obtained by the Expedition, but examination of allied material brought to light the above synonymy. *Aciura distigmoides* Hering (1941) and my *Spheniscomyia neavei* var. *chyuluensis* (1939) are both synonyms of my earlier *Tephrella austeni* (1939), which is in fact a *Gymnaciura.*

Brachyaciura limbata (Bezzi)

Tephrella limbata Bezzi, 1924, *Bull. ent. Res.*, **15**: 126. Munro, 1935, *Ann. Mus. nat. Hung.*, **29**: 146.

Brachyaciura limbata (Bezzi) Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 167, Figs. 40, 187, 170, 302.

Uganda: Kigezi district, Mt. Muhavura, 7000 ft., xi.1934, 1 ♀; Budongo Forest, 7–8.ii.1935, 2 ♂; Masaka, 13.xi.1934, 2 ♂, 4 ♀; Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*), 2 ♂, 1 ♀.

Pediapelta enzoria Munro

Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 174, Figs. 44, 191.

Uganda: Ruwenzori, Nyamgasani Valley, 6400 ft., xii.1934–i.1935 (*F. W. Edwards*). Holotype ♀.

Dicheniotes katonae (Bezzi)

Tephrella katonae Bezzi, 1924, *Bull. ent. Res.*, **15**: 126. Munro, 1935, *Ann. Mus. nat. Hung.*, **29**: 144, Fig. 12.

Dicheniotes katonae (Bezzi) Munro, 1938, *Proc. R. ent. Soc. Lond.*, B. **7**: 118; 1947, *Mem. ent. Soc. S. Afr.*, **1**: 181, text Figs. 15b, 31c, d, Figs. 48, 112, 133, 196, 273, 305.

Kenya: Ngong Forest (Nairobi), x.1934 (*F. W. Edwards*), 1 ♂.

Dicheniotes erosa (Bezzi)

Tephrella erosa Bezzi, 1924, *Bull. ent. Res.*, **15**: 127. Munro, 1935, *Ann. Mus. nat. Hung.*, **29**: 148, Fig. 15.

Dicheniotes erosa (Bezzi) Munro, 1938, *Proc. R. ent. Soc. Lond.*, B. **7**: 118; 1947, *Mem. ent. Soc. S. Afr.*, **1**: 183, Figs. 50, 198.

Uganda: Ruwenzori, Bwamba Pass (west side), 5500–7000 ft., i.1935 (*F. W. Edwards*), 2 ♂; Kigezi district, Mt. Sabinio, 8000 ft., xi.1934 (*F. W. Edwards*), 1 ♀.

Dicheniotes turgens Munro

Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 183, Figs. 51, 199.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935 (*F. W. Edwards*). Holotype ♂.

[Dicheniotes acclivis Munro**]**

Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 184, Figs. 52, 200.

UGANDA: Entebbe, 20.vi.1909 (*G. C. Gowdey*). Holotype ♂ (in British Museum).

PLATENSININI

BEZZINA nom. n.

Bezziella Munro, 1947, December, *Mem. ent. Soc. S. Afr.*, **1**: 185. Homonym of *Beziella* Enderlein, 1947, July, *Mitt. dtsch. ent. Ges.*, **8**: 29.

Enderlein's name is spelled with only one "z", whether purposely or as a printer's error is not clear; in any case, he states that his genus is named after the late Mario Bezzi.

The type species of *Bezzina* is thus *Oxyna margaritifera* Bezzi, 1908 (syn. *Spathulina munroi* Bezzi, 1924).

Pliomelaena brevifrons Bezzi

Euaresta-Pliomelaena brevifrons Bezzi, 1918, *Bull. ent. Res.*, **9**: 30, Plate I, Fig. 8.
Pliomelaena brevifrons Bezzi. Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 200. (The rather complicated synonymy and the forms of this species are dealt with in detail in this Memoir.)

Pliomelaena brevifrons Bezzi, ssp. **xyphosiina** Bezzi

KENYA: Aberdare Range, Mt. Kinangop, 8000 ft., x.1934 (*F. W. Edwards*), 1 ♂.

Pliomelaena brevifrons Bezzi, ssp. **perspicua** Munro

Munro, 1947, *op. cit.*, p. 206, Fig. 211.

The type material is from KENYA: Nanyuki, Mt. Kenya. 1 ♀ paratype, BRITISH CAMEROONS: Mt. Cameroon, Jonga, 5000 ft. (*M. Steele*), was included, but may eventually prove different when more material is available for study.

Pliomelaena brevifrons Bezzi, ssp. **regressa** Munro

Munro, 1947, *op. cit.*, p. 206, Fig. 212.

UGANDA: Ruwenzori, Namwamba Valley, 6500 ft., xii.1934–i.1935 (*F. W. Edwards*). Holotype ♀, 1 ♀ paratype.

Platensina nigrodiscalis Munro

Munro, 1947, *op. cit.*, p. 213, Figs. 65, 219.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*). Holotype ♂.

[Elaphromyia fissa sp. n.]

A South African species that is placed with some hesitation in *Elaphromyia*. The balance of characters may, however, warrant it keeping in mind that it is a relatively shorter species with short head and eye, shorter body and wing. The abdomen has a similar semi-transparency with more or less obscure spots on the terga. Actually the species has some resemblance, especially in its proportions, to the two Japanese species that have been included in *Elaphromyia* *E. multisetosa* Shiraki, 1933, and *E. incompleta* Shiraki, 1933.

All the specimens were taken in the Katberg, 4000 ft., in the Eastern CAPE PROVINCE (*R. E. Turner*). Holotype ♂, 1–15.i.1933; allotype ♀, 14–26.xi.1932; paratypes 1 ♀, x.1932, 1 ♀ (abdomen lost), xii.1932, 1 ♀, 11–18.ii.1933.

The specimens are all more or less crushed having been originally in small paper envelopes; heads of the 3 paratypes came off and are mounted separately on points.

A brown species.

Length, ♂ 3·7 mm., ♀ 4·0 mm.; wing, ♂ 4·2 mm., ♀ 4·1 mm.

Head: length, height, width, 7:8:10; posteriorly slightly blackened above neck; eye rather narrowed below; postocular row whitish yellow, postorbitals 2–3 with a row of short, brown setulae; frons a little wider than long, 0·5 width of head, bare, bristles brown, 2 upper, 3 lower orbitals, ocellars moderate; lunule short; antennae rather deep yellow, 0·7 face, third joint short, rounded at end, arista: flagellum black, micropubescent; face concave, epistome moderately prominent, a row of setulae on sides, parafacials and genae narrow, genal bristle brown; proboscis short, palpi flat, yellow.

Thorax blackish, pubescence fine, pale brown, dust-brown, dense with 3 darker stripes, bristles brown, alveoli black, 1 mesopleural, dorso-centrals halfway between suture and anterior supra-alars, scapulars absent; scutellum yellowish, flat or very slightly convex, 4 bristles, apicals 0·25 basals; squamae and halteres brown; legs light brown, clothing pale, front femora with row of brown bristles below; wing (Fig. 20) relatively short and wide, stigma elongate, its length three times width at base; third vein setulose below before, and above to beyond upper cross-vein, costal bristle well developed, point of anal cell blunt; pattern blackish brown with hyaline or yellow-hyaline spots, few on outer, blacker two-fifths, more numerous on inner portion, a yellow suffusion covers most of the wing, leaving clear hyaline spots on costa in marginal cell, a spot on hind margin of second posterior and at end of third, and a reticulate stripe from alula over axillary region and lower half of third posterior cell.

Abdomen apparently in poor condition in all specimens; it seems to be somewhat translucent with submedian spots on the terminal terga much as in *Elaphromyia adatha*. Type ♂: basal terga translucent ferruginous, tergum 4 with a trace of dust, 5 opaque yellow with moderate dust, submedian rows of spots may be seen, on 3 elongate, on 4 dots, on 5 elongate with a sublateral spot on either side just behind; type ♀: terga mainly black, yellow on sides, the spots not differentiated from the general blackness; paratype 1: more or less translucent, blackened with ferruginous tinge, hind margins of terga 2–5 broadly yellow, 6 mainly yellow with a pair of moderate, irregular, blackish spots, other spots not apparent; paratype 2: abdomen more opaque, terga 2 and 3 yellow, 4, 5 and 6 and base of oviscape blackened, spots apparent on 4, 5 and 6 but no yellow margins. Oviscape flat in specimens, 0·55 mm., brown with pale brown pubescence.

AFREUTRETA-OEDASPIS SERIES

Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 238. 1952, *Mém. Inst. scient. Madagascar*, Sér. E., **1**: 217.

PSEUDAFREUTRETA Hering

Hering, 1942, *Siruna Seva*, **4**: 7 (genotype: *Pseudafreutreta fatua* Hering).

[Pseudafreutreta fatua Hering**]**

Hering, 1942, *Siruna Seva*, **4**: 8.

1 ♀, NIGERIA (*Dr. Annett*). B.M., 1903–1922.

If the identification of this specimen is correct, and it appears to be so from a general balance of characters and in particular the wing-pattern, it is most likely that *fatua* and the following species, *biseriata* Bezzi, are more nearly allied to *Elaphromyia* and to Platensinini generally, rather than to *Icterica* Loew and *Icterioides* Hering.

In his description of *Pseudafreutreta*, Hering states "Stirn in Seitenansicht fast rechtwinklig an der Fühlerbasis vorspringend", but this may hardly be said to be the case in the above specimen, nor in *biseriata*, in both of which the frons is down-sloping and the head oval.

In the present specimen the eye is large and rounded, there being a black spot at root of antennae (which are lost); the proboscis short. Dorsum of thorax with moderate brown dust, pubescence white, rather coarse; scutellum flat, the bristles lost; wing, 4·2 mm., as Hering's figure, third vein with a few setulae at base. Abdomen black with a ferruginous tinge, pubescence brown; oviscape 1·0 mm., 0·25 wing-length.

Pseudafreutreta biseriata (Bezzi)

Afreutreta biseriata Bezzi, 1924, *Bull. ent. Res.*, **15**: 128.

UGANDA: Ruwenzori, Budongo Forest, 7–8.ii.1935, 1 ♂; Mpanga Forest, *c.* 4000 ft., 1 ♂, and Namwamba Valley, 6500 ft., xii.1934–i.1935 (*F. W. Edwards*), 1 ♀.

Owing to the rounded head this species could not remain in *Afreutreta* in which the head is angular. As already noted, it may be nearer *Elaphromyia*, in which genus it might even have been placed, but now preferably in *Pseudafreutreta*.

Pseudafreutreta bicolor sp. n.

UGANDA: Budongo Forest, 7–8.ii.1935 (*F. W. Edwards*). Holotype ♂.

Length 3·8 mm.; wing 4·4 mm.

Similar in all respects to *Ps. biseriata* Bezzi, but may be distinguished by the face and parafacials being black on upper portion as far as tip of antennae, with a deeper black spot at top of parafacials; second antennal joint brown, third black. On dorsum of thorax dust-grey with three weak, brown stripes and pale, whitish, strongly shining pubescence.

Abdomen black, pubescence brown, shining, dust denser, almost moderate.

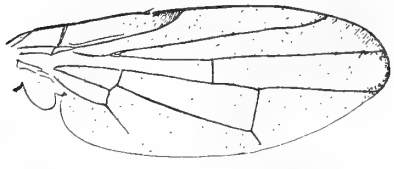

FIG. 19.—*Elgonina refulgens.*

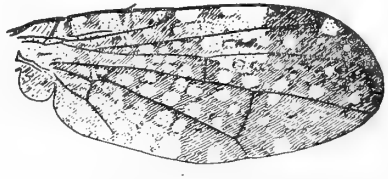

FIG. 20.—*Elaphromyia fissa.*

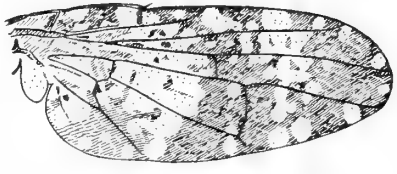

FIG. 21.—*Parafreutreta producta.*

Parafreutreta producta sp. n.

A fair-sized, brown species very like the South African *Parafreutreta hirta* Munro and *P. felina* Munro. It differs in several respects, thus: head more swollen, eye much smaller and gena much wider, stigma and oviscape longer. The wing-pattern is blacker in appearance, not mainly yellow as in the other

two; the apical and median transverse blackish areas are more extensive with fewer, lighter, yellow or subhyaline spots, in between more broadly reticulate and without rather numerous small dark flecks. Like the other species, it is undoubtedly gall-forming on the stems of a climbing *Senecio*.

UGANDA: Ruwenzori, Kilembe, 4500 ft. (*F. W. Edwards*). Holotype ♀, 1 ♀ paratype; West Ruwenzori, 6000 ft., vii.1945 (*V. G. L. van Someren*), 2 ♀ paratypes.

An entirely brown species.

Length 5·7 mm.; wing 4·9 mm. (one female, wing 5·3 mm.).

Head swollen; length, height, width, 7:8:10; eye small, perpendicular; postocular bristles brown, outer verticals sometimes blackish, postorbitals 3 or 4 longer with row of shorter, some black; frons swollen and prominent in front, reddish brown, rather silvery around ocellar dot, on vertical plates and on sides, width about 1·2 length, 0·5 width of head, moderate, pale, rather coarse pubescence on middle and on sides, bristles black, 3 (sometimes 4) lower, 2 upper orbitals, ocellars strong; lunule short; antennae 0·6 face, third joint wide, arista bare; face concave but epistome not prominent, parafacials wide, nearly as wide as third antennal joint, genae very wide, somewhat less than half height of eye; proboscis short, palpi small.

Thorax darker brown on dorsum, with moderate brown dust, all pubescence pale brown; bristles black, scapulars absent, dorso-centrals on line of anterior supra-alars, 1 mesopleural; halteres and squamae brown, upper wide, lower narrow; scutellum flat convex, triangular, pubescence as on dorsum, 4 bristles apicals 0·8 basals; legs normal; wing (Fig. 21) costal bristle weak to moderate, third vein sparsely setose near base, pattern: blackish, apical and median transverse bands more or less broken by reticulation, between them the reticulation more broken up and the hyaline more confluent, above the fourth vein a stronger yellow suffusion becoming more hyaline below.

Abdomen: base brown, terga 3–6 blackish brown, their hind margins moderately brown and a weak median brown stripe; pubescence black, brown-shining, dust slight, apical bristles black, strong; oviscape shining black, black pubescence, length 0·9 mm., 0·2 wing-length, 0·6 pre-abdomen.

AXIOTHAUMA Munro

Munro, 1946, *Ann. Mag. nat. Hist.*, Ser. 11, **13**: 483.

A remarkable genus of which the three following species were described.

Axiothauma edwardsi Munro

Munro, 1946, *loc. cit.*, p. 485, Figs. 1, 2.

KENYA: Mt. Elgon, ii.1935; Heath Zone, 10,500–11,000 ft., on *Senecio elgonensis* (*F. W. Edwards*). Holotype ♂, allotype ♀, 8 ♂, 6 ♀ paratypes; Alpine Zone, 12,000–13,000 ft, ii.1935 (*F. W. Edwards*), 1 ♂, 1 ♀ paratype.

Axiothauma nigrinitens Munro

Munro, 1946, *loc. cit.*, p. 487.

KENYA: Aberdare Range, Mt. Kinangop, 10,000 ft., 26.x.1934 (*J. Ford*), *Senecio brassicaeformis*. Holotype ♂, allotype ♀, 10 ♂, 8 ♀ paratypes; 12,000 ft., 1 ♂ paratype (*F. W. Edwards*); Mt. Elgon, Heath Zone, 10,000–11,500 ft., ii.1935, on *Senecio elgonensis* (*F. W. Edwards*), 1 ♀ on *Senecio* sp. (*J. Ford*).

Axiothauma albinodosum Munro

Munro, 1946, *loc. cit.*, p. 489, Figs. 3, 4.

KENYA: Aberdare Range, x.1934; Nyeri Track, 10,500 ft., 28.x.1934 (*F. W. Edwards*). Holotype ♂, paratypes 1 ♂, 1 ♀, the male paratype labelled "in leaf base of *Senecio brassicaeformis*"; Nyeri Track, 10,500–11,000 ft. (*J. Ford*). Allotype ♀, 1 ♂; "on *Senecio aberdaricus*", 1 ♂.

SPATHULINA SERIES

Munro, 1938, *Trans. R. ent. Soc. Lond.*, **87**: 417; 1947, *Mem. ent. Soc. S. Afr.*, **1**: 240.

Following the comments made in 1947, it has not yet been possible to undertake sufficient research to get a clearer view of the position of *Spathulina* and some other genera. Assuming, as suggested, that this genus does come nearer *Tephritis*, it is still problematic whether it should be included in the Tephritinae. It and some related genera may be more readily recognised as a tribe, but with the study of *Actinoptera* presented here, it may be asked whether this latter genus should be placed with *Spathulina*. This is being done provisionally, but more finality may be reached when the complex of species that have been put in *Tephritis* have been analysed more fully.

Spathulina acroleuca (Schiner)

Tephritis acroleuca Schiner, 1868, *Novara Reise*, Dipt., **8**: 268.
Spathulina acroleuca (Schiner) Munro, 1938, *Trans. R. ent. Soc. Lond.*, **87**: 422 (see for references and synonymy).

UGANDA: Mt. Elgon, 5.viii.1934 (*J. Ford*), 1 ♀. (Sweeping short grass, Butandiga, 7000 ft.)

ACTINOPTERA Rondani

Rondani, 1870, *Boll. Soc. ent. Ital.*, **3**: 162.
Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 161.
Shiraki, 1933, *Mem. Fac. Sci. Taihoku Univ.*, **8** (Ent. 2): 446.
Munro, 1934, *Trans. R. nt. Soc. Lond.*, **82**: 99.
Syn.: *Trypanea* pp. Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 559; *Bull. ent. Res.*, **15**: 140.

The genus is accepted in the general sense of Hendel, 1927. Bezzi may have overlooked or ignored it; he placed the species he knew in *Trypanea*, separating them on the short stigma, but did not refer to the absence of the upper orbital bristle. By implication authors have included *brachystigma* Bezzi and *hemimelaena* Bezzi in *Actinoptera*, but both have 2 upper orbitals. Bezzi described *tuckeri* as a *Euribia*, but included it under the section with short stigma in his tables for *Trypanea*. It is a typical *Actinoptera* and one of the larger species of the genus.

In its over-all characters the genus is fairly compact. There is always only 1 upper orbital (rarely duplicated), 2, sometimes 3 lower, and a supernumerary fourth may occur; the frons is wide at vertex, about 0·5 width of head and about as long, moderately to rather strongly narrowed anteriorly; antennae shorter than face, third joint usually short and broad, rounded at end, the upper corner may become or appear rather angular, or even widened outwardly, but such differences seem to depend on the condition of the specimen; the proboscis may be termed "hooked", but the labella are rather short, not much more than half the length of the haustellum. There is moderate, usually bluish dust on dorsum of thorax, and brown on abdomen, or sometimes bluish or more strongly blue, or varying to yellowish and brownish; bristles dark or brownish, dorsocentrals at suture, 1 mesopleural, the pteropleural and sternopleural whitish, 2 scutellars; legs yellowish or light brownish, often the femora black, but may vary from yellow to black in a species. An analysis of the wing-pattern is included in the guide to species; typically there is a well-defined pattern on outer third of wing, consisting of a dark area with apical rays, the apical fork well developed, and hyaline spots, the number, size and degree of fusion varying not merely from one species to another, but commonly within a species and at times differing on each wing of a specimen; the dark pattern may be extended basally. It is interesting that in most the microtrichiae are colourless (or white in oblique light) on all hyaline areas, including the base, while in a few they are black, or dark, on the basal half or more; however, since the microtrichiae are usually black on the dark, infuscate areas, this may indicate an incipient, at times practically absent or at most very weak, basal reticulation. In the venation the chief character is the short stigma, about as long as wide at base, but sometimes elongate (*vinsoni*); on the second vein is a bend or kink at which is the bar across the marginal cell; it is somewhat variable in position; the bare third and the fourth vein tend to diverge at their ends; the point of the anal cell may be acute but tends to be rounded in the smaller species; the sixth vein ends about half-way between the point of the anal cell and wing-margin. The oviscape is polished black with black pubescence, and may be long, about half wing-length to rather short; the male terminalia are more like those of the *Spathulina* species; the vesica is usually small, but in general there are no marked nor striking differences between the various species; sternites: both the

second and fifth are much widened, the latter like a fish-tail when the indent is deep; the narrower sternites 3 and 4 are variable in length and width; all sternites are rather irregular in outline and the fifth more or less asymmetrical. The aedeagus shows a moderately sclerotised "capsular" portion and a rather small, membranous vesica; an apical "tube" projects hardly at all or very little beyond the capsular portion into the vesica; pre-aedeagal spines are more usually absent, if weak difficult to see, occasionally stronger. The ninth tergum is fairly uniform in shape and flanges are absent, the lower points (cerci) are turned inwards at an angle of 30°–45°; they are rather short, rounded or blunt, and may be somewhat constricted at base; they may be thinner or thicker from one species to another, but on the whole do not show much differentiation.

The lateral abdominal membranes are covered with minute scales (Fig. 46). These often appear in more or less longitudinal rows, the scales slightly overlapping and appear to be concavo-convex. Each has a rather long, thin hair at the posterior end; in some lights the hairs appear as a very fine pubescence, but tend to disappear especially on a slide mount. On the other hand, there may be a dark ridge along the scale; when these ridges are marked, they give rise to a pseudopubescence, that is, an appearance of a fine black pubescence, but directed anteriorly. When seen laterally on a fold in the membrane, all scales have this appearance.

Biology

Known larvae live in the flowers of species of *Helichrysum* (Compositae); some form terminal galls on the twigs.

Guide to Species

A. Stigma elongate, length along costa nearly 2·5 width at base; a strong bar from stigma to hind margin across mid first basal, discal and third posterior cells; apical pattern more reticulate, the apical rays wide; 3 lower orbitals, rarely a fourth; oviscape about 0·5 wing-length . . *vinsoni* Munro
(*Note:* 2 lower orbitals in other species, only occasionally a supernumerary third.)

B. Wing-pattern reduced to a few isolated dark spots apically; stigma "twice as long as wide" (*sec.* Hering), but this may depend on the method of measuring . . . . . *maculifrons* Hering

C. Stigma short and usually a well-developed apical pattern. Marginal cell black at outer end, rarely with a small or moderate hyaline spot there; at about middle of cell an upward bend or kink in the second vein and at this point a dark bar across the cell (this bar may be paler or rarely absent); the space between the bar and tip of stigma may be:

1. Clear hyaline, generally shorter, with white (colourless microtrichiae and not at all divided; bar and kink mostly nearer line of upper cross-vein, but in any case the portion of the marginal cell beyond the bar tends to be longer than the inner portion between bar and stigma; microtrichiae on basal half, more or less, of wing white, only dark on infuscated spots 2

— The space rather longer,[1] the microtrichiae dark and a slight, but never very strong, infuscation may develop; as a rule there is a moderate white spot at end of stigma and another farther out with a slight but more marked darkening of the costa and membrane between them; these white spots are variable, the outer may be absent, the inner less marked, both are difficult to observe but become more apparent obliquely, otherwise a wing must be mounted in Canada balsam; at the same time the condition of the specimen must be taken into account, as this pattern may appear very different in a pale, teneral specimen of a species and one that is well coloured. Further, since these spots are not generally apparent or conspicuous, the marginal cell appears to have 2 hyaline spots (apart from an adventitious spot in the black tip); however, when the infuscation on the inner area becomes more pronounced and the bar at the kink somewhat paler, then the marginal cell appears to have 3, subequal, hyaline spots. The end of the marginal cell beyond the bar tends to be short, but even if the bar and kink are about midway between the ends of veins 1 and 2, they are generally beyond the line of the upper cross-vein 11

2. The apical dark pattern is on outer third of wing to a convex line through bar in marginal cell and lower cross-vein, not counting a more or less developed and separated bar from stigma to upper cross-vein and over middle of discal and third posterior cells 4

– A cohesive pattern extended basally to within line of upper cross-vein, or even farther basally (if doubtful, cf. *ampla*, 10) 3

3. A dark pattern on outer three-fourths of wing to within the line of upper cross-vein; in marginal cell usually a large hyaline spot at end of dark area in addition to the two, one on either side of the bar, which is at upper cross-vein so that outer portion of marginal cell is about 3·5 times the inner; more or fewer dark basal spots, including one in middle of outer costal cell; frons at vertex 0·6 width of head . . . . . *tuckeri* (Bezzi)

– dark pattern extended well towards base of wing over discal and third posterior cells and a strong bar to stigma; the 2 hyaline spots in marginal cell large, the outer portion about twice length of inner . . . . *fuscula* sp. n.

4. Females 5

– Males 11

5. Oviscape long and tubular, much longer than (1·5 times) pre-abdomen, 0·4–0·5 wing-length; median bar present 6

– Oviscape shorter, more conical, about as long as, not much longer, or shorter than pre-abdomen, 0·22–0·33 wing-length; median bar evanescent, weak or moderate 7

6. Median bar narrower, reaching hind margin or not, no infuscation basally, or a trace, occasionally more strongly over first basal and discal cells, no marked bar from knot to end of anal cell, or isolated darker spots at each end; flower infesting . . . . . *peregrina* (Adams)

– A strong, wide, infuscated median bar and a fairly strong bar from knot to end of anal cell; European species . . . . . *discoidea* (Fallén)

7. Median bar faint, absent, or apparent obliquely 8

– median bar present, if broken, remaining parts as dark as apical pattern . . 10

8. Two small, faint, hyaline spots at end of discal cell, median bar faint; femora black; oviscape 0·35 wing-length . . . . . *kovácsi* (Bezzi)

– A single, large hyaline spot at end of discal cell, or the spot partly or quite open on inner side, if apparently absent, visible obliquely 9

[1] *schnabeli* (Speiser) (q.v.) may come here.

9. Rather smaller, ♂ 1·8 mm., ♀ 2·5 mm.; wing (Figs. 28, 29), pattern more or less reduced and very variable, the apical dark area reduced and rays thin and disconnected, the pattern generally rather pale, only tip of marginal cell blackened, median bar almost absent, at most weak; oviscape 0·25 wing-length; gall-forming . . . . . *rosetta* Munro (*Note:* cf. *maculifrons* Hering.)

– Rather larger, ♂ 2·4 mm., ♀ 3·0 mm.; wing-pattern well defined, median bar evanescent, more apparent obliquely; oviscape 0·34–0·36 wing-length; flower-infesting . . . . . *mundella* (Bezzi)

10. Wing (Fig. 31), median bar normal, usually strong to upper cross-vein, ending in a large, more or less angular spot on fifth vein and enclosing large hyaline spot at end of discal, but where it may be broken may reach hind margin of wing, no dark spot in middle of first basal cell; oviscape 0·3 wing-length; gall-forming . . . . . *contacta* sp. n.

— Wing (Fig. 30), median bar runs rather across middle of first basal and discal cells than via upper cross-vein; inner dark spot in first basal weak or absent, but generally no infuscation between it and upper cross-vein along second vein, but the latter may be absent in *peregrina* and *contacta*; there may be 5 hyaline spots in second posterior and a small to moderate in black tip of marginal cell; dust on abdomen blue; oviscape 0·25 wing-length; biology not known . . . . . *ampla* sp. n.

11. Wing-pattern with median bar weak, absent or as spots: cf. *kovácsi*, *rosetta* and *mundella* 8

— Median bar moderate to strong; some males of *peregrina* may not be readily distinguished by the wing from *contacta* and *mundella* 12

12. Median bar on wing entire, large hyaline spot at end of discal complete (cf. 7); sternites 3–5 more elongate, 3 and 4 narrow, longer than wide *peregrina* (Adams)

(If sternites 3 and 4 wider than long . . . . *mundella* Bezzi)

— Median bar narrow to upper cross-vein ending in a rather large, more or less rhomboidal, spot on fifth vein, and may be broken in discal (cf. 10); sternites 3–5 shorter, 3 and 4 about as long as wide . . *contacta* sp. n.

13. Dark microtrichiae extend to base of wing to or nearly to line of humeral cross-vein; oviscape shorter, 0·22–0·33 wing-length 14

— Dark microtrichiae restricted to middle of wing, white on basal two-fifths, or with occasionally a trace in basal cells and outer costal cell; apical pattern dark and well defined, additional hyaline spots not developed or seldom; along inner margin of apical pattern a row of 6 large, white microtrichial spots; oviscape longer, 0·4 wing-length . . . . . *stricta* sp. n.

14. Larger, ♂ 2·3 mm., ♀ 3·0 mm.; 2 or 3 white microtrichial spots along first basal cell, sometimes absent, a few in discal and third posterior, but inner half of latter and axillary region clear hyaline; position of kink and bar in marginal cell variable but usually well beyond upper cross-vein and beyond mid-point between ends of veins 1 and 2; dark microtrichiae almost to line of humeral cross-vein; apical pattern generally more reticulate; oviscape rather longer, about 0·3 wing-length; ♂, sternites 3 and 4 wider, wider than long; lateral abdominal scales showing moderate pseudo-pubescent appearance; aedeagus (Fig. 44 *b*) with end of "tube" barely projecting beyond capsular portion . . . . *pallidula* sp. n.

— Smaller specimens, ♂ 1·7–1·9 mm., ♀ 2·7 mm.; no white microtrichial spots in first basal cell or at most a trace; bar at kink tending to be nearer upper cross-vein or midway between veins 1 and 2; oviscape shorter; male sternites 3 and 4 narrower, about as long as wide; aedeagus (Fig. 44 *c*), end of tube distinctly projecting beyond capsular portion . . . 15

15. ♂: posterior corners of sternite 5 broadly rounded; lateral abdominal scales with a median ridge giving an appearance of pseudo-pubescence; femora black, occasionally yellow; a series of white microtrichial spots along discal and more or less along third posterior cell:
i. lower, inner portion of third posterior cell and anal lobe clear hyaline;
ii. this area with dark microtrichiae to margin, infuscation often strong, and a double row of white spots, it and the discal together appear reticulate;
iii. possible intergrades between i and ii . . . . *acculta* sp. n.

— ♂: sternite 5 with posterior corners acute angular; lateral abdominal scales without median ridge, a pseudo-pubescence absent; femora occasionally black, mostly blackened, or front pair yellow, or all tending to be yellow; no white microtrichial spots in discal and third posterior cells, or barely a trace, occasionally a row in discal, but these cells not appearing reticulate, there being mostly the usual spot or spots at outer ends:
i. lower inner portion of third posterior cell and anal lobe clear hyaline;
ii. this area with dark microtrichiae to hind margin;
iii. possible intergrades between i and ii . . . . *abdita* sp. n.

(*Note:* In the various combinations of wing-pattern and coloration of femora, odd specimens may appear to be intergrades between *acculta* and *abdita*, but they are distinct on the male terminalia.)

[**Actinoptera vinsoni** Munro (Wing, Fig. 22)]

Munro, 1946, *Mauritius Inst. Bull.*, **2**: 247, Figs. 1, 2.

A species from Mauritius characterised by the elongate stigma. Larvae in flower-heads of *Helichrysum yuccaefolium*.

[**Actinoptera tuckeri** (Bezzi) (Wing, Fig. 23)]

Euribia tuckeri Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 553, Plate XV, Fig. 107, and p. 560, under *Trypanea*; *Bull. ent. Res.*, **15**: 137, and p. 140, under *Trypanea*.

Described on a male from Komatipoort, Transvaal, the species also occurs in Madagascar.

A normal *Actinoptera*; frons wide, about 0·6 width of head; a coherent but variable pattern covers the outer two-thirds of the wing to a line inside the upper cross-vein so that a median transverse bar from stigma over upper cross-vein is not separated; there is a broken band over basal cross-veins and a dark spot in middle of outer costal cell. In the female the abdominal dust is greyish-brown with moderate, submedian darker brown stripes which are not apparent in the male.

Actinoptera fuscula sp. n.

This species may be distinguished by the extension of the dark apical pattern basally across the discal cell to the end of the anal cell.

KENYA: Aberdare Range, x.1934, above Nakuru, 9300 ft., 6.iii.1935 (*F. W. Edwards*). Holotype ♂, allotype ♀, 3 ♂, 3 ♀ paratypes on Helichrysum sp. "A".

UGANDA: Mt. Elgon, between Butandiga and Bulambuli, 8000 ft., viii.1934 (*J. Ford*), 1 ♀ paratype.

Length, ♂ 2·2 mm., ♀ 3·6 mm.; wing, ♂ 2·75 mm., ♀ 3·0 mm.

Head angular, eye oblique; length, height, width, 4·5:5:10; brownish with light dust, posteriorly black, yellow on postorbits and more widely below, postoculars whitish, postorbitals 3–4 with some black setulae, beard pale, sparse; frons flat, bare, light ferruginous, sides and across vertex and black ocellar dot white dusted, length 0·9 width at vertex, 0·45 width of head at vertex, at antennae 0·35, bristles brown, 1 upper, 2 lower orbitals (the latter variable, in 4 specimens 3, the median one usually weaker; in 1 specimen, 3 on right and 2 small supernumeraries on left; in another specimen 2 on right and 2 very small supernumeraries on left), ocellars moderate; lunule yellowish, dusted, short; antennae light ferruginous or brownish, 0·8 face, third joint broadly rounded, arista brown, very short pubescent; face short, epistome projecting about 0·4 width of third antennal joint, parafacials moderate, genae 0·2 height of eye, bristle brown, falcella strong; proboscis hooked, labella 0·7, haustellum 0·9 length of mouth-opening.

Thorax black; dorsum: dust moderate, broadly bluish anteriorly and on sides, brown on middle of hind half and over scutellum; pubescence pale; less dust and some pale pubescence on sides and below; bristles brown, dorsocentrals at suture, 1 mesopleural, hind notopleural, pteropleural and sternopleural whitish; halteres yellow; squamae yellowish with brown margins, upper wide, lower narrow; scutellum length 0·5 width, 2 bristles; legs ferruginous, coxae blackened, femora black except ends, tibiae slightly blackened in middle, but variable; wing (Fig. 24), stigma short, the dark apical pattern extended basally over discal cell to end of anal, the hyaline spots relatively small and variable, sometimes different on each wing of a specimen; there may be additional small hyaline spots in the middle of the first posterior cell (in ♀ type 5 on one wing, 4 on the other), in second posterior cell usually 5 well-separated spots (in ♂ type on right wing are 2 inner spots, the median pair united, the apical absent, on left wing 5 spots, but inner one of middle pair very small); in discal cell the hyaline spots are quite variable.

Abdomen black, somewhat moderate, brown dust, pubescence sparse, rather fine, very pale yellow; oviscape elongate, 0·4 wing-length, a little longer than pre-abdomen, polished black, black pubescence, mid-joint black, aculeus ferruginous; venter black; male terminalia not dissected.

[**Actinoptera discoidea** (Fallén)]

Tephritis discoidea Fallén, 1814, *Vetensk. Akad. Handl.*, **1814**: 171.

Actinoptera discoidea (Fallén), Hendel in Lindner, 1927, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 162, Fig. 65, Plate 11, F.4. Séguy, 1932, *Enc. Ent. Dipt.*, **6**: 169. Munro, 1934, *Trans. R. ent. Soc. Lond.*, **82**: 102, Fig. 1a.

Syns. *aestiva* Meig., 1826; *gnaphalii* Loew, 1844; *aestiva* Rond., 1871 (*sec.* Hendel, 1927).

A European species included for comparison. Wing (Fig. 25).

In comparison with the male terminalia in *peregrina*, the sternites of *discoidea* (Fig. 36) are relatively wider, the cerci (Fig. 45 *a*) more attenuate, and there is no apparent pseudo-pubescence on the lateral abdominal scales.

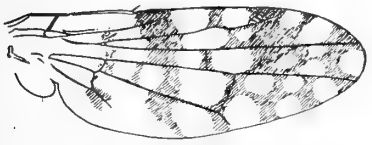

FIG. 22.—*vinsoni*.

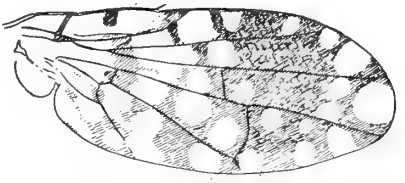

FIG. 23.—*tuckeri*.

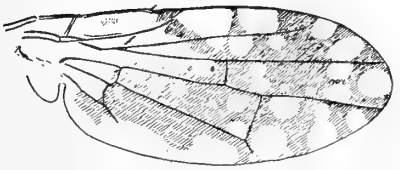

FIG. 24.—*fuscula*.

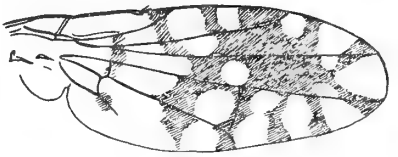

FIG. 25.—*discoidea*.

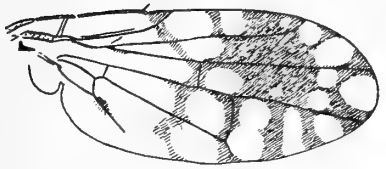

FIG. 26.—*peregrina*.

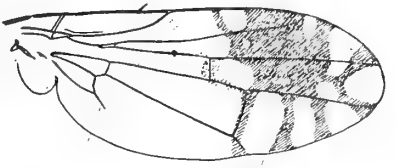

FIG. 27.—*mundella*.

Actinoptera spp., wings.

[Actinoptera peregrina (Adams)]

Urellia peregrina Adams, 1905, *Kansas Univ. Sci. Bull.*, **3**: 170 (type in Kansas Univ.); Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 142.

Trypanea peregrina (Adams) Bezzi, 1918, *Bull. ent. Res.*, **9**: 44; 1920, *id.* **10**: 264; 1924, *id.* **15**: 143; 1924, *Ann. S. Afr. Mus.*, **19**: 562, Plate XV, Fig. 117; Munro, 1929, *Ann. S. Afr. Mus.*, **29**: 31.

Actinoptera peregrina (Adams) Munro, 1934, *Tr. R. ent. Soc. Lond.*, **82**: 102, Fig. 1 b; 1935, *Dept. Agric. S. Afr. ent. Mem.*, No. **9**: 42.

Trypanea urophora Bezzi, 1918, *Bull. ent. Res.*, **9**: 44.

A common species in southern Africa, but not represented in the British Museum and other collections from East Africa; Bezzi records a female from Nyasaland which he states "approaches the form *mundella*", but does not

mention the length of the oviscape. Originally described from Salisbury, Southern Rhodesia, I have two male "cotypes" kindly sent by the Kansas University. Comparison and dissections show South African specimens to be the same species. The specimens returned to me which Bezzi identified as *peregrina* in 1924 (*Ann. S. Afr. Mus.*) are all males and on dissection of four this proves correct. However, one male was placed among the "*mundella*" series (q.v.) described at the same time. Curiously, one female taken at that time and place (Prospect, November 1922) is *mundella*, but there were no *peregrina* females.

A. peregrina is very like the European *discoidea*, but is best regarded as distinct; they may usually be separated on the basal band of the wing-pattern (Fig. 26). Further, in *peregrina* males the sternites (Fig. 37) are narrower, the cerci (Fig. 45 *b*) stouter and there is a distinct appearance of pseudo-pubescence on the lateral abdominal scales. If there is any doubt on the wing-pattern whether males may be *peregrina* or *mundella*, in the latter the sternites, especially 3 and 4, are wider than long. The females are readily separated on the lengths of the oviscape. Aedeagus (Fig. 44 *a*).

Distribution and host-plants

The species has actually been taken in a few more or less isolated localities, but the general trend of its distribution seems to be from Southern Rhodesia, through the central and eastern Transvaal, and Natal as far as the eastern part of the Cape Province. No specimens have been seen from the south, south-western and western Cape.

Larvae have been found in the flower-heads of *Helichrysum setosum*, *H. fulgidum* and *H. foetidum*.

There is one male in the British Museum from Katberg, 4000 ft., xii.1932 (*R. E. Turner*).

[Actinoptera rosetta Munro]

Actinoptera rosetta Munro, 1934, *Trans. R. ent. Soc. Lond.*, **82**: 104; 1935, *Dept. Agric. S. Afr. ent. Mem.*, No. **9**: 43; Hering, 1937, *Konowia*, **16**: 250.

A small species, ♂ 1·8 mm., ♀ 2·2 mm., oviscape short, about 0·3 wing-length. The wing-pattern (Figs. 28, 29 *a*, *b*) is very variable and no grouping is possible; it may be reduced and broken up, the rays and apical form isolated, or when more complete, with additional hyaline spots. It may be at times much like that of *mundella*, but in the latter the parafacials are wider. The stigma is usually well developed but short, or may be markedly smaller, almost reduced; the kink in vein 2 and bar in marginal cell are very variable in position, at or somewhat beyond the line of the upper cross-vein and usually at or before the mid-point between veins 1 and 2; the black tip of the marginal varies in length and the cell in width. A female from Durban has an abnormal wing; the third

vein ends some distance from the wing-margin, the upper part of the apical fork is missing, the tip of the wing being filled with a rather large hyaline area.

It is not possible to say whether or not *maculifrons* Hering has anything to do with *rosetta*.

Biology

The commoner host-plant is the widespread *Helichrysum kraussii*, but specimens were also reared from *Helichrysum teretifolium* at Port Elizabeth, November 1952, H. K. Munro. Adults are usually taken sweeping over the host-plant and the larvae form small, inconspicuous, rosette galls on the ends of twigs, a single larva to a gall. The species has been recorded from the eastern Cape Province, through Natal and the Transvaal as well as Lourenço Marques.

[Actinoptera mundella (Bezzi)]

Trypanea peregrina (Adams) var. *mundella* Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 562, Plate XV, Fig. 118.
Trypanea mundella Bezzi, 1924, *Bull. ent. Res.*, **15**: 143.
Actinoptera mundella (Bezzi) Munro, 1934, *Trans. R. ent. Soc. Lond.*, **82**: 104, Fig. 1c.

When Bezzi described *mundella*, very briefly, as a form of *peregrina*, he did not indicate types, number of specimens nor sex. He returned eight "cotypes" to me, one, a female from Pretoria, with his label "*Trypanea mundella*, type ♂ ♀, n. sp. (form)"—the "sp." over "form". These eight specimens now prove to be:

2 ♂, 1 ♀	Pretoria, 1.i.23 and 5.i.23	*mundella.*
1 ♀	Prospect, 18.ii.23	*mundella*
1 ♂	Prospect, 18.ii.23	*peregrina*
2 ♂, 1 ♀	Prospect, 24.x.22	*abdita.*

Further, specimens recorded later (Munro, 1934) from Elliot, Stellenbosch and the Cape Peninsula, also prove to be *abdita* sp. n. (q.v.).

For comparison, figures of the wing (Fig. 27) and of the sternites (Fig. 38) are given.

Biology

Actinoptera mundella has only been recorded from South Africa. The larvae live in the flowers of species of *Helichrysum*. The following, in the Pretoria collection, may be recorded:

NATAL: Durban, ii.1936 (*W. E. Marriott*), 1 ♂ from *Helichrysum longifolium*, and 3 ♀ collected; Pietermaritzburg, i.1949 (*H. K. Munro*), 13 ♂, 4 ♀ from *H. appendiculatum*. TRANSVAAL: Elandshoek, 22.xi.1947 (*A. L. Capener*), 11 ♂, 10 ♀ from *H. coriaceum*.

[Actinoptera maculifrons Hering]

Hering, 1937, *Konowia*, **16**: 250, Abb. 6.

Described on a male from Okahandja, south-west Africa. I have seen no specimens that could be this; the stigma is stated to be "twice as long as wide", and the wing-pattern reduced to a few isolated spots.

[Actinoptera ampla sp. n.]

The difference in the appearance of the median band on the wing seems to be specific; unfortunately no more specimens have become available.

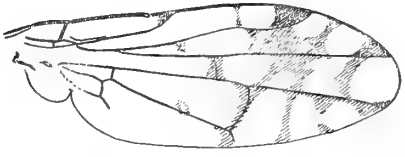

FIG. 28.—*rosetta*.

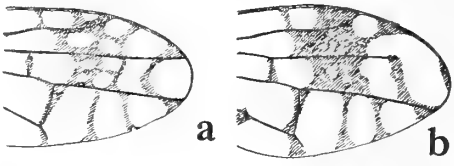

FIG. 29.—*rosetta*, a. var.; b. abb.

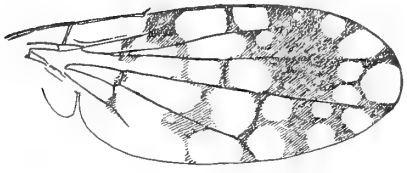

FIG. 30.—*ampla*.

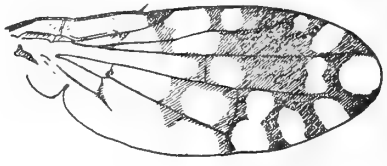

FIG. 31.—*contacta*.

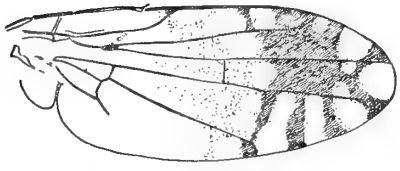

FIG. 32.—*stricta*.

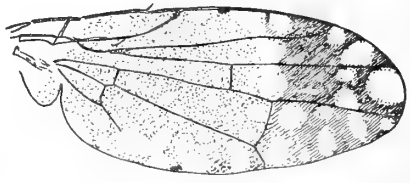

FIG. 33.—*pallidula*.

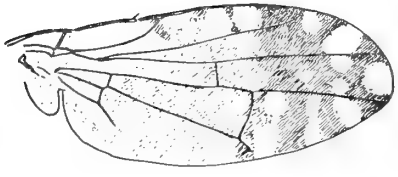

FIG. 34.—*acculta*.

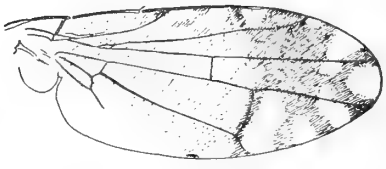

FIG. 35.—*abdita*.

Actinoptera spp., wings.

Holotype ♂, Stellenbosch, Cape, 13.xii.1947 (*H. K. Munro*) (S. Afr. Nat. Coll. Insects, Pretoria); allotype ♀, Swellendam, Cape, 7.xii.1931–18.i.1932, *R. E. Turner* (British Museum).

As far as may be judged, the female is the same species as the male.

Length, ♂ 2·3 mm., ♀ 2·8 mm.; wing, ♂ ♀ 2·5 mm.

The female is crushed through having been packed in a small paper envelope. Normal for the genus.

Head: brownish yellow, blackened behind, 2 lower orbitals; antennae light brown; parafacials moderate, about 0·25 antennal width.

Thorax and abdomen black, dust slate-grey, pubescence pale, bristle brown; legs light brownish, hind femora very slightly blackened; wing (Fig. 30)—see guide; kink and bar in marginal cell beyond upper cross-vein and at inner third between veins 1 and 2. The main distinction in the pattern is the bar from stigma across first basal and distal cells; oviscape short, 0·15 wing-length; male terminalia not dissected.

[**Actinoptera kovácsi** (Bezzi)]

Trypanea kovácsi Bezzi, 1924, *Bull. ent. Res.*, **15**: 143. Munro, 1935, *Ann. Mus. nat. Hung.*, **29**: 155, Fig. 23.
Actinoptera kovácsi (Bezzi) Munro, 1934, *Trans. R. ent. Soc. Lond.*, **82**: 102.

The types, ♂ ♀, are in the Hungarian National Museum and were redescribed by me in 1935, but no specimens quite like them have been seen since. The types should be re-examined and more material collected in Abyssinia.

The new species, *contacta*, described here, seems similar, but the median band in *kovácsi* is weak and it lacks the conspicuous spot on the fifth vein.

[**Actinoptera contacta** sp. n.]

Numerous specimens from southern Africa and one from Kenya have been placed in this new species; it is at times difficult to distinguish from *peregrina*, but is gall-forming and the oviscape is shorter than the pre-abdomen. On the wing the more or less incomplete (or broken) median band usually ends in a characteristic and rather large, more or less diamond-shaped spot on fifth vein (absent in *kovácsi*).

The following material is in the Pretoria collection; the male paratype from Albertinia in the British Museum, and the Kenya specimen in the Coryndon Museum.

Cape Province: Port Elizabeth (Humewood), xi.1952 (*H. K. Munro*), in tipgalls on *Helichrysum teretifolium*. Holotype ♂, allotype ♀, 1 ♀ paratype, with galls. Paratypes: 1 ♀, East London, 29.iv.1928 (*H. K. Munro*); 1 ♂, Stellenbosch (Jonkershoek), 20.iii.1943 (*H. K. Munro*); 1 ♂, Sir Lowry's Pass, 10.xii.1947 (*H. K. Munro*); 1 ♂, Albertinia, 15.viii.1930 (*R. E. Turner*). Natal: 1 ♀, Mposa, Zululand, x.1951 (*H. K. Munro*); 4 ♂, Umvoti (Benvie), viii.1946; 7 ♂,

2 ♀, Bulwer, 15.vii.1952; Drakensberg, 5 ♂, 1 ♀, Singali area, vii.1949; 5 ♂, 1 ♀, Cathedral Peak area, 18.viii.1952 and 4 ♂, 1 ♀, vii.1946; 8 ♂, 4 ♀, Umlambonja River, vii.1944; 1 ♀, Loteni River, vii.1941; 1 ♂ Natal National Park, vii.1939, from gall on *Helichrysum simillimum*, and 2 ♂, vii.1945 (*W. E. Marriott*). BASUTOLAND: Mamathes, 1 ♂, 3.ii.1943, 1 ♀, 30.xi.1947 (*C. Jacot-Guillarmod*); 2 ♂, 2 ♀, Molomoshoek, iii.1944, 2 ♂, Malealea, iii.1944; 2 ♂, Mahlatsa, x.1946 (*H. K. Munro*). TRANSVAAL: Pretoria, 1 ♂, 5.i.1923 and 2 ♂, 14.xii.1951; Irene, 2.iii.1952 (*H. K. Munro*). KENYA: Naivasha, iii.1937 (*H. J. A. Turner*).

Normal for genus. Length, ♂ 2·4 mm., ♀ 3·0 mm.; wing, ♂ 2·25 mm., ♀ 2·5 mm.; oviscape 0·8 mm.

Head: light brownish rather whitish, black behind; frons brown, 2 lower orbitals; antennae light brownish, third joint blackened; parafacials and genae moderate.

Thorax black, slate-grey dust, pale pubescence; legs yellowish brown with blackish tinge, hind femora moderately blackened; wing (Fig. 31), kink and bar in marginal cell at inner third between veins 1 and 2, pattern strong to line of lower cross-vein, the median bar fairly strong but variable, with the characteristic spot on fifth vein; may be broken in discal so that large apical spot is open, as a rule does not reach hind margin, but does occasionally.

Abdomen black, rather thin blackish dust; oviscape moderately long, legging-shaped, 0·8 mm., 0·33 wing and 0·8 pre-abdomen. The male terminalia do not show any marked features except that the cerci (Fig. 45 *c*) appear more widened at the end and form a more marked broad point upwards compared to *peregrina*; sternites (Fig. 39).

Biology

Galls have been found on the tips of twigs of *Helichrysum teretifolium* and *H. simillimum*; they are rather large but not easily distinguished from a normal growing tip containing an inflorescence. The galls are formed and full development of the larva to emergence of the adult takes place before the inflorescences appear. Adults are generally difficult to obtain by rearing as the development period seems to be short and galls must be collected just at the right time; also parasitism is usually very heavy; from the rearing made at Port Elizabeth, only 4 flies emerged, 36 parasites.

[**Actinoptera stricta** sp. n.]

This and the following species form a distinct group characterised by the extent of the dark microtrichiae over the basal part of the wing, together with a subreticulate appearance, and that the kink on vein 2 and the bar in the marginal cell are much farther out.

CAPE PROVINCE: Port Elizabeth, xi.1952. Holotype ♂, allotype ♀, 3 ♀ paratypes, from flowers of *Helichrysum sordescens*; paratypes: 6 ♂, 9 ♀,

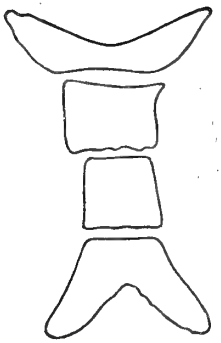

FIG. 36.—*discoidea.*

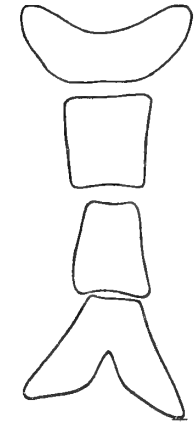

FIG. 37.—*peregrina.*

FIG. 38.—*mundella.*

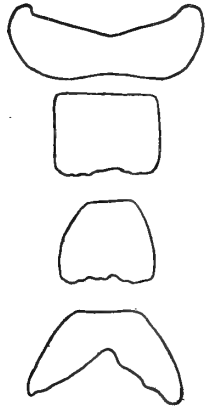

FIG. 39.—*contacta.*

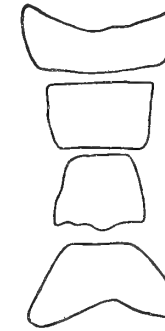

FIG. 40.—*stricta.*

FIG. 41.—*pallidula.*

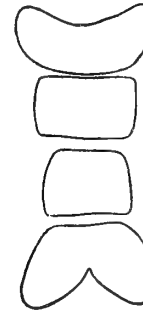

FIG. 42.—*occulta.*

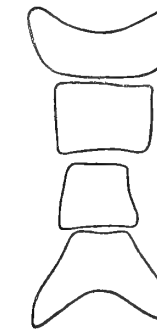

FIG. 43.—*abdita.*

Actinoptera spp., male sternites.

Port Elizabeth (Humewood), 15.vii.1947; 2 ♂, 1 ♀, 18.xi.1953 (*H. K. Munro*).

Normal for genus. Length, ♂ 2·25 mm., ♀ 3·1 mm.; wing, ♂ 2·3 mm., ♀ 2·6 mm.

Head: black behind; frons dark brown, silvery down middle and on sides, 2 lower orbitals; antennae yellowish brown, nearly as long as face; face brown, parafacials narrow.

Thorax black, moderate slate-grey dust, sparse pale pubescence; legs yellowish brown, anterior and middle femora very slightly blackened, hind rather strongly; halteres brown; wing (Fig. 32) normal apical pattern, in middle of wing very slight infuscation and dark microtrichiae, the latter white basally from line of stigma; in the inner part of marginal cell are 2 white microtrichial spots, often difficult to observe but usually apparent obliquely; for preference a wing should be mounted and since the oviscape is long, comparison should be made with the wing of *peregrina*. In better marked specimens with a more pronounced infuscation, there is a darker spot on costa and on membrane below, about half-way between the bar and end of stigma so that 2 more distinct hyaline spots appear there; the kink on vein 2 and bar in marginal are beyond the upper cross-vein, but about midway between veins 1 and 2.

Abdomen black, rather thin slate-grey dust and pale pubescence. Oviscape elongate, 0·4 wing, shining black, rather long, brown pubescence. ♂: sternites (Fig. 40); 5 with shallower indent, 3 wider than 4; aedeagus: an apical tube projecting well beyond capsular portion and pre-aedeagal spines moderate, stronger than usual, lateral abdominal scales in rather separated rows (or the membrane has been more stretched than usual), no appearance of pseudo-pubescence, but pale pubescence readily seen.

PALLIDULA COMPLEX

Series of specimens from East and from South Africa proved troublesome to evaluate specifically, and some had, indeed, been earlier confused with other species such as *mundella*. At first sight there could be sorted out larger specimens, from East Africa only, and smaller. The latter on the whole seemed to show some segregation of characters at each extreme of the range, but overlapping to some extent. Thus in the Cape specimens the femora were rather yellow, tending to black, while in Kenya specimens they were black, sometimes yellow. A fairly marked division could be made on the appearance of the discal and third posterior cells; this area in East African specimens appearing reticulate due to white microtrichial spots absent in South African specimens, or only occasionally in the discal. A study of the male terminalia showed more marked differences; the rounded posterior corners of the fifth sternite in East African and the angular corners in South African specimens appears reasonably constant.

It was finally decided to consider that three species were represented as shown in the species guide. This may not be entirely satisfactory, but the present case seems to be one in which although a good number of specimens have been available, yet more are needed over a wider range. The discovery of a specimen at Elliot in the Transkei quite like those from East Africa is, at present, remarkable.

Whether *schnabeli* Speiser belongs here—or is one of these species—cannot be decided as the type is stated to have been destroyed.

Actinoptera pallidula sp. n.

KENYA: Aberdare Range, Mt. Kinangop, 8000 ft., x.1934. Holotype ♂, allotype ♀, 2 ♂, 3 ♀ paratypes on *Helichrysum* sp.; paratypes: 5 ♂, 4 ♀, Mt. Kinangop, Cedar Forest, 9000 ft.; 2 ♀ above Nakuru, 9300 ft., 6.iii.1935, on *Helichrysum* sp.; 1 ♀, Nyeri Track, 10,500 ft.; Mt. Elgon, ii.1935, 10,500–12,500 ft., 1 ♀. UGANDA: Kigezi district, xi.1934, 1 ♂, Mt. Sabinio, 8000 ft. (all coll. *F. W. Edwards*).

Normal for genus. Length, ♂ 2·2 mm., ♀ 3·4 mm.; wing, ♂ 2·75 mm., ♀ 3·1 mm.

Head: black behind to eye-margin with light grey dust, postorbital bristles whitish with some black setulae; frons russet, blackened behind, silvery dust across vertex and black ocellar dot, moderately on sides and over lunule, bristles brown, 2 lower orbitals, ocellars moderate; antennae 0·7 face, ferruginous, more or less blackened, arista brown, very short pubescent; face short, epistome slightly prominent, parafacials moderate, genae wide, 0·2 height of eye, falcella strong, genal bristle pale brown; labella 0·7 length of mouth-opening.

Thorax: black, dust very light brownish, bluish anteriorly or more extensively blue; pubescence pale, sparse, rather fine; squamae brownish with blackish margins, upper wide, lower narrow; halteres yellow or slightly blackened; legs ferruginous, femora black, ends more or less ferruginous, tibiae very slightly blackened in middle, front pair least so; wing (Fig. 33), outer third with usual blackish, variable pattern, apical rays widened at ends, or thinner, in second posterior cell cross-bars tend to develop between rays dividing the 2 inner indents into 4 spots; basal two-thirds or rather more of wing with a very faint reticulate pattern as it is faintly infuscated (sometimes more strongly) and the microtrichiae are black to extreme base; there are rather numerous hyaline spots on which the microtrichiae are white or colourless, a conspicuous spot being one on the costa in the marginal cell at the end of the stigma; the pattern becomes more apparent when viewed obliquely.

Abdomen black, slight to moderate, even, brown dust, pubescence, sparse pale; oviscape about as long as pre-abdomen, 0·3 wing-length, but may vary from 0·25 to 0·4. Venter black. ♂ terminalia: aedeagus (Fig. 44 *b*), sternites (Fig. 41).

Actinoptera acculta sp. n.

British Museum: Kenya: Mt. Elgon, 10,500–11,500 ft., ii.1935. Holotype ♂, allotype ♀, paratypes 1 ♂, 8 ♀, on flowers of *Helichrysum engleri*; paratypes: 1 ♂, 2 ♀, Heath Zone; 1 ♀, Mudangi, 11,000 ft., "from Senecio". Aberdare Range, above Nakuru, 9300 ft., 6.iii.1935, x.1934, 1 ♂ and 1 abdomen lost, on *Helichrysum* sp. "A". Uganda: Kigezi district, Mt. Muhavura, 8000 ft., 20.xi.1934, 3 ♂, 1 ♀; Mt. Mgahinga, 10,000–12,000 ft., 1 ♀; Ruwenzori, Mt. Sabinio, 8000 ft., 2 ♀; Mt. Karangora, 9900 ft., 1 ♂, 1 ♀ (*F. W. Edwards*). Nyasaland: 1 ♂ (damaged), Limbe, 29.xii.1916 (*R. C. Wood*) (not as paratype).

Coryndon Museum: Kenya: paratypes: 8 ♂, 6 ♀, Londiani, xi.1937 (*V. G. L. van Someren*), from Composite No. 441; 4 ♂, 4 ♀, Nairobi, vii.1937 (*V. G. L. van Someren*), from Composite No. 187; 2 ♂, 3 ♀, Ngong, vii.1937, from Composite No. 155 (*V. G. L. van Someren*).

South African National Collection, Pretoria: South Africa: paratypes: 1 ♂, Elliot, Transkei, 11.v.1924 (*H. K. Munro*) (recorded by Munro, 1934, *Trans. R. ent. Soc. Lond.*, **82**: 104, as *mundella*), 1 ♀, Bulwer, Natal, 15.vii.1952, netted over *Helichrysum*, 1 ♀, Durban, Natal (Benmore), x.1935 (*W. E. Marriott*).

Length, ♂ 2·0 mm., ♀ 2·25 mm.; wing, ♂ ♀ 2·1 mm. Similar to *pallidula*.

Head: frons brown in ♂, yellowish in ♀, but variable.

Thorax: dust brown with bluish tinge, generally more brown, sometimes more or almost all blue; legs: femora black, occasionally yellowish or brown; wing (Fig. 34): in the types a row of white microtrichial spots along upper part of third posterior cell.

Abdomen: dust brown, black at base; oviscape 0·6 mm., 0·27 wing-length; male: aedeagus (Fig. 44 *c*), sternites (Fig. 42), 5 with posterior corners broadly rounded, the lateral abdominal scales (Fig. 46 *a*) with a pseudo-pubescent appearance.

The appearance of the wing in the third posterior cell and anal region is usually not easy to observe on the specimen but is more apparent on a mounted wing. To some extent, too, the appearance depends on the condition of the specimen; this area generally appears more reticulate than in *abdita*.

As indicated in the species guide, two groups may be recognised:

(i) The anal lobe and outer part of third posterior cell are clear hyaline, with white microtrichiae. The specimens showing this are from Mt. Elgon and Londiani.

(ii) A slight infuscation and dark microtrichiae extend to wing-margin; white microtrichial spots may be weakly developed, more usually a row along upper part of third posterior cell, with a greater or less, sometimes well marked, outer row. The specimens are those from the Aberdares and Nairobi in Kenya, from Uganda and Nyasaland, together with the South African specimens from Elliot, Bulwer and Durban.

(iii) On the whole, the two groups may be fairly easily separated, but some of (i) show a tendency to an extension of the dark area over the hyaline, while in some of (ii) it is difficult to decide how far the outer part of the third posterior cell and anal lobe may be hyaline.

It will be seen that the following species, *abdita*, shows a similar variation. The absence of white microtrichial spots in *abdita* in the discal and third posterior cells is not always decisive; however, the difference in the shape of the fifth sternite and the appearance of the lateral abdominal scales seems to be conclusive. It may be noted that the terminalia of the male from Elliot are quite like those of males from Kenya, but the femora are yellow.

The Elliot specimen presents a curious problem in distribution since it seems isolated and typical *abdita* were taken to the north and south. Elliot is a village in the Transkei; Molomoshoek, where the Basutoland *abdita* was taken, is about 100 miles northwards from Elliot, but on the other side of the Drakensberg; Prospect, where other *abdita* specimens were taken, is near Komgha and about 90 miles south of Elliot, but there are no high mountain ranges between.

[**Actinoptera abdita** sp. n.]

The following material is in the South African National Collection of Insects, Pretoria:

South Africa: Cape Peninsula: Muizenberg, 11.xi.1931. Holotype ♂, 2 ♂ paratypes, allotype ♀, 2 ♂ paratypes; Clovelly, 21.x.1931, Fishhoek, 2.x.1931, 2 ♂, 1 ♀ paratypes. South-western Cape: paratypes: 1 ♂, 1 ♀, Phillippi (Cape Flats), 10.iv.1949; 1 ♂, 1 ♀, Gordon's Bay, 21.iii.1943; 1 ♂, 1 ♀, Groot Drakenstein, 18.iii.1943; 2 ♂, Stellenbosch (Jonkershoek), 13.xii.1947, and 1 ♀, 10.v.1928. Eastern Cape: 3 ♂, Grahamstown (Manley Flats), 8.vii.1947; 1 ♂, Salem (near Grahamstown), 8.vii.1947; Prospect (near Komgha), 1 ♀, 14.x.1922, 2 ♂, 24.x.1922 (all the foregoing *H. K. Munro*); 2 ♂, 7 ♀, Port Elizabeth, ix.1949 (*C. G. C. Dickson*); Basutoland, 1 ♂, Molomoshoek, iii.1914 (*H. K. Munro*).

Synonymy: Under *mundella* were placed the three specimens from Prospect (Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 562), and, later, the specimens from Cape Peninsula and Stellenbosch (Munro, 1934, *Trans. R. ent. Soc. Lond.*, **82**: 104).

Length, ♂ 2·0 mm., ♀ 2·5 mm.; wing, ♂ ♀ 2·1 mm. Similar to *pallidula*.

Head brown, black behind, very slightly yellowish behind eyes and more yellow behind genae; frons yellowish-brown, 2 lower orbitals, 0·6 width of head; antennae brown, third joint blackish, arista black, micropubescent.

Thorax dust blue-grey, slight brownish tinge, but generally more blackish in appearance; legs yellowish brown in types and most Cape Peninsula specimens, also from Gordon's Bay, but with a tendency to blackening of hind femora on proximal two-thirds, blacker in specimens from Stellenbosch, etc. Those

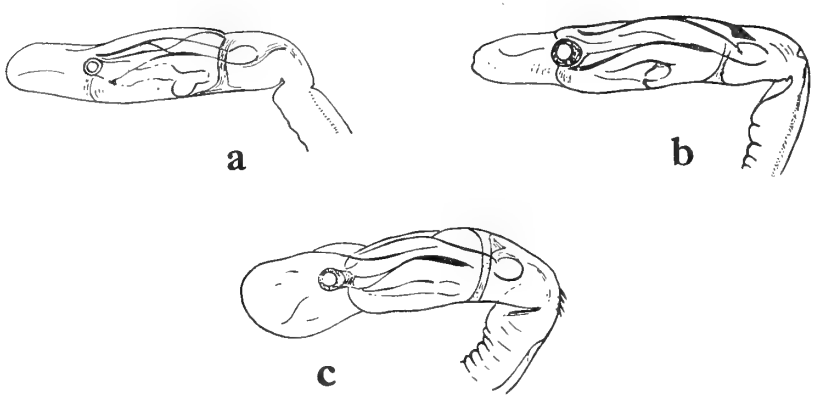

FIG. 44.—*Actinoptera* spp., aedeagi.
(a) *peregrina*, (b) *pallidula*, (c) *acculta*.

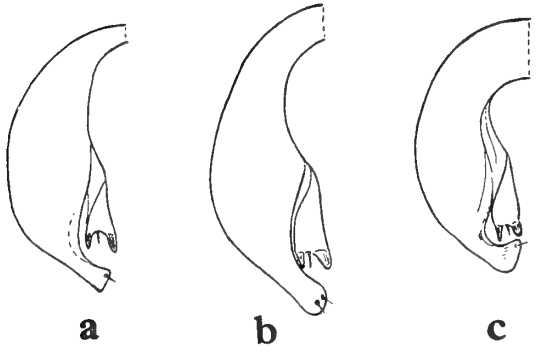

FIG. 45.—*Actinoptera* spp., tergum 9, left half, rear aspect.
(a) *discoidea*, (b) *peregrina*, (c) *contacta*.

FIG. 46.—*Actinoptera* spp., scales of lateral abdominal membrane.
(a) *acculta*, (b) *abdita*.

from Eastern Cape have hind femora usually blacker and others moderately blackened, but some from Port Elizabeth hardly blacker than blackest from Cape Peninsula.

Abdomen dust brownish; ovipositor 0·3 wing-length; male: aedeagus like that of *acculta*, sternites (Fig. 43), posterior corners of 5 acute-angular, lateral abdominal scales (Fig. 46 *b*) without ridge and showing no pseudopubescence.

Wing (Fig. 35): kink and bar in marginal cell midway between veins 1 and 2, but variable and may be somewhat farther out; in male type, in third posterior cell a white spot at outer end and in discal, 2 at end and 1 large somewhat below upper cross-vein, the general infuscation weak; there may be a single spot at end of discal and occasionally one or two inwards forming a row; in some specimens the infuscation in middle of wing is strong, almost like the apical pattern; in the third posterior and anal lobe is a very faint infuscation, sometimes apparently only broadly along sixth vein, but the microtrichiae are dark to wing-margin, usually difficult to observe unless a wing is mounted and examined under fairly high power. The above is seen in specimens from the Cape Peninsula, Gordon's Bay and Groot Drakenstein. On the other hand, the Port Elizabeth series, with those from Stellenbosch,[1] Prospect, Grahamstown, Salem and Molomoshoek have the anal lobe and inner border of third posterior cell hyaline with white microtrichiae as in figure, the infuscation is weak and the spots at ends of discal and third posterior weak or almost absent; mostly there is an indication of two at the end of discal, sometimes a third inner spot.

Biology

The larvae live in the flowers of species of *Helichrysum*. The specimens from Port Elizabeth were reared from flowers of *Helichrysum subglomeratum* C. G. C. Dickson, and one from Stellenbosch from *Helichrysum crispum* H. K. Munro.

[Actinoptera schnabeli (Speiser)]

Trypanea peregrina (Adams) var. *schnabeli* Speiser, 1924, *Beitr. Tierkd. Denkschr. Braun*, p. 153.
Actinoptera schnabeli (Speiser) Hering, 1947, *Siruna Seva*, **6**: 10, Abb. 7.

Hering published the original sketch of the wing made by Speiser. The minor differences noted by him in the wing-pattern are merely variations, but the position of the kink on vein 2 and the bar in the marginal cell would indicate that Speiser's specimen belongs to the *pallidula* series as indicated here. However, as Hering states that the type has been destroyed, it is now impossible to discover if it had any basal wing-pattern, or anything else about it.

[1] Stellenbosch and Groot Drakenstein are not more than 12 miles apart, one on either side of the mountain range.

TEPHRITINAE

It is probable that much more will have to be done before a satisfactory understanding of this complex group can be attained, especially in regard to genera of world-wide distribution. The subfamily is by no means homogeneous, and, together with the wide distribution of genera, there may be more world-wide species than is at present realised.

It is not advisable to make dogmatic statements about the limits of the Tephritinae, nor what genera should be included. In an earlier paper (Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 2–6) consideration was given to the possible distinctions between the Trypetinae and Tephritinae. Only one character seemed to be of definite value, namely, the presence or absence of scapular bristles; apart from this, the general balance of characters must be relied on to locate genera. It is better to concentrate on the more detailed study of species and genera with a view to grouping them in tribes. Further, apart from the more usual, horizontal relationship grouping, a vertical grouping may indicate a truer genetic relationship as has been suggested for the Eutreta-*Oedaspis* series (Munro, 1952, *Mém. Inst. scient. Madagascar*, Sér. E., **1**: 217).

Hendel's 1927 division into two main groups on the length of the proboscis is not satisfactory. He admitted it was not always possible to judge the length of the labella which may become shrivelled or drawn up into the mouth cavity. It is evident in many cases, too, that when the labella are of moderate length, the appearance on a specimen depends on how they happened to be when the insect died or as it dried; in one specimen of a species the proboscis may appear short and stumpy, in another distinctly "hooked".

To some extent a more satisfactory character seems to be in the presence or absence and the relative sizes on the wing-pattern of hyaline spots, one or two below the tip of vein 2, one above tip of vein 3.

Paroxyna pattern. Chiefly reticulate; there may be two moderate or rather small spots below vein 2, or the two more or less united, or one large and none or a very small, occasional spot above 3. Those below 2 form a pre-apical row or a hyaline band with the two pre-apicals in first posterior cell, and the one in second posterior below vein 4.

Trupanea pattern. Chiefly a dark apical area with rays; none or a small spot below vein 2, a large one above 3, the latter, with the large apical and two pre-apicals, in first posterior, and large in second posterior below vein 4, give rise to the apical fork.

Wing-pattern is, however, very variable and subject to reduction when the hyaline spots are more or less lost in the more extensive hyaline areas; on the other hand, there are species that belong, for instance, to the *Paroxyna* group in which the pattern does not conform to the usual appearance. In any case, there need be no great difficulty in placing a species as there is usually a sufficient

balance of other characters on which to rely. The separation of genera such as *Sphenella* must depend on other characters. *Actinoptera* and *Campiglossa* may be more nearly allied to Spathulina. The typical Tephritine groups are the two already noted, *Paroxyna* s.l. and *Trupanea* s.l. and including *Tephritis*. Others are included here to some extent provisionally and more detailed study than can be undertaken at present is needed.

An attempt has been made to assess the value of various characters such as the number of bristles, even their colour, and wing-pattern among others and it does seem that these, in various combinations, do lead to homogeneous groupings which are to some degree supported by characters of the male terminalia. The latter have been studied as far as material has been available; female structures must await future study. Some curious facts have been discovered; in some instances there are series of species all so much alike and subject to the same variation that they can only be identified on the male genitalia, while in others these structures are of less value. Mention may be made of the remarkable "prongs" on the sixth sternite of the *fenestrata* group of *Paroxyna*.

PAROXYNA SERIES

PAROXYNA Hendel *sens.lat.*[1]

Trypeta Loew, 1952, *et auctt.*
Euribia, Ensina Bezzi, 1924, *Bull. ent. Res.*, **15**: 135–137.
Paroxyna Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 146.
Paroxyna, Shiraki Hering, *et al.*

Genera and species:

Antoxya oxynoides.
Dioxyna sororcula, picciola, chilensis.
Lethyna gladiatrix, liliputiana, permodica, blaesa, nexilis, aequabilis, evanida.

[1] It is necessary to add a note about the generic name *Stylia* Robineau-Desvoidy (1830, *Myodaires*, p. 754) placed by Hendel (1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 50) as a synonym of *Myopites* Brébisson, but without designating a generic type beyond a tacit admission that one of the three species, *mentharum*, included by Robineau-Desvoidy was probably the same as *longirostris* Loew, and so a *Myopites*. Of the other two species, *maculata* seems to be quite unrecognisable while *bidentis* is a *Paroxyna* (Collin, 1950, *Ent. Rec.*, 62 : 70). If therefore *bidentis* should become the type of *Stylia*, then *Paroxyna* would become a synonym of *Stylia*. It would, however, be regrettable to discard a well-established name, so, to maintain the position as it now is, *Stylia mentharum* R.D., is hereby designated the generic type of *Stylia* R.D., which thus remains a synonym of *Myopites*. In doing this I am following the opinions of Mr. J. E. Collin and Mr. H. Oldroyd. At the same time it may be admitted that in the opinion of Dr. M. Hering *S. bidentis* is preferable as type since it is a better known species. Nevertheless to avoid needless and irritating changes in nomenclature it seems to me far preferable to fix *mentharum* as the type species thereby preserving the well known generic name *Paroxyna*.

Paroxyna (*fenestrata* group): *fenestrata, spinata, shiraensis, argentata, disperita.*

(*péringueyi* group): *péringueyi, siphonina, granulata, salina, saltoria, sigillata, edwardsi, brunalata.*

(*anomalina* group): *anomalina, munroi, umbritica, anchorata, nacta, petulans.*

(*ignobilis* group): *guttata, ignobilis, eflorata, kanabaina, astuta, compta, mitrata.*

Desmella anceps, clarinetta, conyzae, myiopitoides.

Scedella glebosa, pilosa, caffra, sandoana, cyana, boxiana, praetexta, dissoluta, spatulata, spiloptera, incurva, caesia, flecta, kawandana, longiseta.

Mesoclanis dubia, ovalis, magnipalpis, polana, cribripennis, bruneata, optanda, hyalineata.

Included here are various African species mostly placed in *Ensina* by Bezzi, 1924, some in *Euribia* and other genera. The central series of species (*Paroxyna ignobilis*, etc.) agrees with Hendel's diagnosis, 1927, while surrounding species grade away on either side, so that on reaching the extreme forms, *Antoxya* on the one side, *Mesoclanis* on the other, it may be felt that the limits of *Paroxyna* in the widest sense have been reached. Certain species such as "*Camaromyia*" *helva* (Loew) (*Trypeta*), "*Ensina*" *reticulata* Munro, and others that have been associated with *Paroxyna* (or under *Euribia* or *Ensina*), and having a more or less reticulate wing-pattern cannot be included in the group, nor can "*Ensina*" *hyalipennis* Bezzi, with a hyaline wing. They seem to form a group more nearly allied to *Sphenella*.

During this study, it has at times been felt that African species placed here in *Paroxyna* s.s. may not be truly congeneric with palaearctic species, or not in their entirety. Conversely, there is a need for a thorough study of the palaearctic species. What is desirable is a revision of the group for the whole world, checking all types. This might include some 200–300 species, but to get the material together and study it in detail would be a formidable task; even in the present study more specimens in many cases would have been an advantage. It would also soon be evident that a close study of related genera would be needed.

As far as African species are concerned, a reasonably sound, broad classification may be based on combinations of the number of frontal and scutellar bristles associated with a fairly well-defined wing-pattern grouping; on the whole, some degree of character amphimixis is apparent.

The species may be rather small to moderate-sized, 2–6 mm., grey, usually with submedian tergal spots on the abdomen, elongate labella and reticulate wing-pattern.

The group as a whole provides an interesting study of aspects of character variation, especially the parallel recurrence and variation of similar characters in various species. With this variation and at times great similarity in the balance of external characters, it is at times difficult to fix closely allied species except on the male terminalia. Parallel characters may be present and vary regularly to more or less the same extent in several species; they appear more fixed in some, more variable in others. Spasmodic variations, even in the shape of the head, may occur within a species.

The general condition of specimens must always be taken into account; many details of colour and pattern are lost if specimens are greasy or otherwise discoloured. Reared specimens are often troublesome or impossible to identify when more or less teneral through having been killed too soon after emergence. Coloration, especially of the wing-pattern, may take three or four days to attain full intensity, but a pattern may be normally pale. Further, even the terminalia may be unreliable and even unsafe if the specimens are teneral.

Therefore, keeping these points in mind, variation in certain characters, such as wing-pattern, the dorsal thoracic stripes, the colour of the femora and tergal spots on the abdomen, even if extreme, cannot in practice be accepted as indications of specific differences. A general consideration of the main features follows.

Head usually angular, the fronto-facial angle prominent and epistome projecting; it may be short or long, the parafacials correspondingly narrow or wide, but the latter may be wide in a relatively short head. When the head is short, the eye is more vertical in its long diameter, more oblique when the head is longer. The shape of the head is perhaps less variable, but may vary in length and the eye become less or more oblique either in relation to the head or somewhat independently. The apparent shape may vary from various causes. One may be mainly an optical illusion; mostly the head in a pinned specimen is in its normal position, but occasionally may be tilted backwards so that the vertex rests somewhat on the anterior edge of the dorsum of the thorax. Then, partly due to this juxtaposition with the thorax, a short head may appear elongate. At times, within a species in which the head is normally short, it may become lengthened (or more flattened), possibly through abnormal pressure during the pupal stage. Artificial deformation after emergence may also occur; this arises chiefly from a more or less teneral condition of a specimen. If an insect is killed too soon after emergence parts of the body tend to collapse and shrivel, this being especially noticeable in the head. If there is a longitudinal collapse, the frons becomes narrowed and the face pushed out, thus lengthening the head; at the same time, the parafacials, if normally wide, may appear narrow.

The frons is flat and bare, there may be a trace of pubescence in *Antoxya oxynoides*, and usually slight in *Scedella* (*caffra* series); a median, silvery stripe

is commonly present, very strong in some, weak in others and often only apparent when the frons is viewed obliquely, or is absent; in a greasy specimen it disappears. When absent, as in *ignobilis*, occasional individuals may show a slight stripe. There are always 2 upper orbitals, the hind one pale, and 2 lower—*oxynoides* has 1; postoculars long and white, postorbitals usually 4–6 with some short, black setulae.

Antennae normal, usually a little shorter than face; arista short to micropubescent, rather longer in *oxynoides*.

Epistome slightly to moderately or strongly projecting.

Proboscis: labella elongate and always distinctly so even when fully turgid; they may at times be shrivelled and in poorly preserved specimens less obviously so. They are not less than half length of mouth-opening (in *caffra* series 0·5–0·7 this length); in general about as long as mouth-opening and either barely or only slightly project beyond the epistome when drawn up; in *siphonina* and *granulata*, and particularly in the *anceps-myiopitoides* series as well as in Mesoclanis they may be 1·25 that length and project well in front and even somewhat behind. The palpi usually vary in length with the proboscis.

Thorax: dorsum variable in appearance; often grey-dusted; when brown-dusted, sides and anterior edge remain grey. Stripes may be absent, or 3 weak to strong brownish to bronzy stripes may appear separated anteriorly and broadly confluent before scutellum; these stripes may become broader and finally merge to form a single, broad median stripe. The presence and variation of the stripes vary from species to species, as well as within a species. In *péringueyi*, for instance, there is a complete range from no stripes to 3 and finally a single broad stripe; in *ignobilis* the range seems to be geographical; no South African specimens have been seen with a single broad stripe, from Eritrea only with such a stripe, while East African specimens show a wider range.

Legs yellow or brownish, or femora blackened or black; in *siphonina* legs yellow in female, hind femora black in male, or slightly blackened in both sexes; in *sororcula* there is a normal variation from yellow to black femora, while in *ignobilis* femora are more usually black, but tend to become yellow.

Bristles: dorso-centrals more usually at or nearer suture, in *Scedella* 0·3–0·5 distance to anterior supra-alars from suture; pteropleural white; scutellars 2 or 4, apicals may be more or less than half basals, the difference usually sufficiently distinct for the separation of species groups. Occasionally apicals very short and may disappear in some specimens of a species. It is always necessary to make sure that small apicals have not been broken off, care being needed as the alveoli are difficult to see.

Abdomen grey-dusted, sometimes lightly so, typically with brown-dusted, dark, submedian tergal spots. These may be well defined, or larger, or so increase in size that the abdomen may be brown-dusted with only a narrow, median grey stripe and grey on sides.

Wing-pattern typically reticulate, but very variable in detail. An apical form is not formed, but the arrangement of the hyaline spots at the tip of the wing may sometimes give an impression of a fork. A hyaline spot is almost invariably present below the tip of vein 2 and 1 below, but one is not usual above tip of vein 3. The two below vein 2 may be separated, or more or less united into a double (figure-of-eight) spot, or a pear-shaped or oval spot, and this may be an indication of specific or subspecific difference. They may form a row with the two before end of first posterior cell and the one at the end of second posterior, and this row may be more or less united or coalesce to form a complete pre-apical hyaline band; a hyaline spot at wing-tip is more usually small or absent; in *Scedella* it is well developed and the pre-apical row less so. That in stigma may be normally present or absent in almost any series of some species. The position of any spot may vary, as for instance a small spot in submarginal cell which may be above or somewhat before or beyond upper cross-vein. On the other hand, some spots at the base of first posterior cell seem more fixed. In the *myiopitoides* series there is as a rule a hyaline spot, or, when the pattern is banded, a hyaline space, the centre of which is over the lower cross-vein. In *ignobilis* a large spot is always to the inner side of lower cross-vein, and in some species, 2 or 3 small hyaline spots in this position are of use in helping to identify a species. Thus, since differences in the position and appearance of hyaline spots may be merely normal, or individual, and not at all geographical variations, care is needed in their use in separating species. An examination of male terminalia may be needed for final identification as between *ignobilis* and *eflorata*. Normally reticulation does not extend to extreme base of wing. The pattern may vary considerably in appearance: the strands of the network may be narrow or wide, pale or dark, or there may be darker spots or areas which give the wing a speckled appearance, especially to the unaided eye; this is noticeable in the *ignobilis* series, and seems to be common among European species; the hyaline spots may be more of an even size or not. Reduction in the pattern is common. Finally, a pattern may be more fixed in one, more variable in another species. Abnormal variation in the intensity of the pattern is often due to the specimens being killed too soon after emergence; the pattern is paler than it should be and may be confused with a normally pale pattern, or areas that should be dark are not apparent; there may also be adventitious hyaline marks.

The appearance of the pattern varies according to the illumination and angle from which the wing is viewed. Differences in intensity of a pattern are often more noticeable to the eye, and tend to become less marked with increasing magnification. Moderate magnification is best with direct light against a white background; when seen by transmitted light a very different impression of the intensity of the coloration may be gained, paler infuscation sometimes disappearing. Pale patterns in particular become conspicuous when the wing is looked at

obliquely and the hyaline spots appear white owing to the reflection of light from the colourless microtrichiae. It is further important that, if possible, a wing should be mounted on a slide for detailed study and drawing. On the specimen the wing membrane may be more or less plicate and thus give an incorrect measurement for the width and a wrong impression as to how far veins may be parallel or otherwise.

Analysis of Wing-pattern and Guide to Species of Paroxyna Series

ANALYSIS OF WING-PATTERN

This is a study of the types of wing-pattern presented by the *Paroxyna* group. It is not intended for the final identification of species, but as a help in understanding the value of the wing-pattern in classification. Cross-references are given to the species guide 1

SPECIES GUIDE

The word "guide" is used here since the more usual term "key" seems to give identification a finality that may all too often be fictitious 18

ANALYSIS OF WING-PATTERN

A. Pattern reticulate, well-defined, diffuse or reduced 1
B. Pattern banded, reticulate-banded or simple 13
C. Pattern unlike A or B 17
D. Pattern dimidiate . . . . . *Mesoclanis*, pp. 52

1. Pattern reticulate, well defined, with sharp margins and hyaline parts clear, varying from pale to dark, also in size and confluence of hyaline spots and in width of intervening strands of network, may be reduced or modified. If any suggestion of banding, or if a hyaline spot at base of first posterior cell directly above lower cross-vein, or is proboscis much longer than mouth, cf. 13 2
– Pattern subreticulate, diffused or with undefined hyaline or paler spots, few or many; usually a slight over-all infuscation, but base may be merely deeper yellow 12
– Pattern much reduced, barely reticulate, or evanescent:
(*a*) Two scutellars . . . . . *Lethyna evanida* (Bezzi) 21
(*b*) ? Four scutellars . . . . *Scedella longiseta* (Hering) 59
2. Reticulation uniform in colour (dark or pale) and in width of strands, hyaline spots more or less uniform in size and more evenly spaced; when pale, stigma and spots along costa usually darker 3
– Pattern appears speckled to the eye, but tends to be less markedly so when magnified. Certain and on the whole darker spots occur at and below stigma, over upper cross-vein, at end of discal cell and over lower cross-vein, at end of marginal and just below, and at wing-tip; on these are no or only odd subhyaline spots and between a wider reticulation of larger hyaline spots which are more or less confluent, may become more so and leave the dark spots as remnants of the pattern. (If no darker area over upper cross-vein, and if there tends to be a bar from end of marginal cell towards and over lower cross-vein, see *helvus*, 71.) 5
3. Apical scutellars long, more than half length of mouth-opening; an almost complete reticulation, sometimes reduced, that may show some indication of median and apical bands . . . . . *Scedella*, pp. 52
– Apical scutellars short, less than half basals 3a

3a. Complete reticulation . . . . . *siphonina* 38
péringueyi 41

(If head very long, see *Deroparia*, p. 1014.)

– Reduced reticulation, or moderately complete, varying from pale to dark . . 4

4. A reduced, sometimes moderately complete, pale or rather dark pattern; spot at base of first posterior cell before lower cross-vein; proboscis shorter
granulata 41

– Pattern rather more broken up and reduced; usually a hyaline spot directly above lower cross-vein at base of first posterior cell; proboscis very long and projecting . . . . . *myiopitoides* series 51

5. Four scutellars 6

– Two scutellars 10

6. Darker spots less pronounced, pattern generally paler (more so if specimen is teneral), but reticulation more complete; frontal stripe absent, or very weak . . . . . *ignobilis* 47
eflorata 48
kanabaina 48

– Spots conspicuous and pattern generally darker, intervening reticulation more broken and tending to disappear; frontal stripe usually present . . 7

7 (78). An anchor pattern developed, the reticulation broken up but still fairly obvious and rather more small hyaline spots on the dark areas, 2 hyaline spots in middle of submarginal cell 8

– Not so; a V-pattern or irregular 9

8. One lower orbital . . . . . *oxynoides* 18

– Two lower orbitals . . . . . *umbritica* 36

9. A V-pattern, intermediate reticulation almost absent, spots at stigma, lower cross-vein and end of marginal cell united to form a thick V, or they may be more or less isolated; a single hyaline spot in middle of submarginal cell
anomalina 37
munroi 37
compta 37

— An irregular, broad infuscation; along costa and at apex of wing an indication of more normal reticulation, with a wide stripe from middle of first posterior cell across discal towards end of anal . . . . *saltoria* 44
sigillata 44

10. Pattern a rather dark, but broken reticulation . . . . *gladiatrix* 19

— Pattern very pale except along costa 11

11. Head elongate . . . . . *Dioxyna* spp. 19

— Head short . . . . . *liliputiana* 22

12. Pattern more obscurely infuscated, barely reticulate . . . *edwardsi* 43

— A more marked but still diffuse reticulation, the hyaline or subhyaline spots not clearly defined,
(*a*) A uniform, dark infuscation to extreme base . . *brunalata* 43
(*b*) Generally paler and base more yellow . . . . *argentata* 32
blaesa 25

— Hyaline spots tending to be more defined, the pattern grading to clear hyaline, evenly reticulate . . . . . *fenestrata* 31
shiraensis 32
aequabilis 24

13. Reticulate-banded; pattern reticulate with more or less well-marked pre-apical band of hyaline spots 14

— Pattern with simple bands or bars, pale or dark, narrow or wide, more or less reduced and very variable, tending to reticulate, but as a rule a hyaline spot above lower cross-vein; labella elongate, projecting well beyond epistome when drawn up . . . . . *Desmella* 27

14. A median, transverse, reticulate band from stigma over both cross-veins . . 15
— A usually conspicuous, but sometimes less marked, bar from end of marginal cell over lower cross-vein, no dark area over upper cross-vein and an isolated dark area at stigma; the bar may be separated from or united to darker apical band (not a *Paroxyna*, but included for reference) *Ptosanthus helvus* 71
15. A wide basal infuscation from extreme base along costa united to wide median band separated from apical band by broadly hyaline dotted band; bands may have relatively few hyaline or subhyaline spots, or may be extensively broken up by lace-work of hyaline spots; apical spot absent or small; parafacials wide, head more, or appearing more, elongate; labella longer than mouth-opening; tergum 9 of male with large flange *Mesoclanis* pp. 52
— Extreme base of wing hyaline with few dark spots; a well-marked median and apical band with more or fewer hyaline spots, the two separated by a pre-apical band of larger hyaline spots more or less fused, an apical hyaline spot as a rule; pattern often reduced and difficult to decide if derived from banded or reticulate type; if median band not marked, see 17 *Scedella* 52
16. Bands simple (Fig. 135), usually 3—at apex of wing, a median Y-shaped and one in between, basally only a few isolated dark spots; small hyaline or subhyaline spots may develop occasionally, but often a large hyaline spot at tip of wing and one in marginal cell at top of pre-apical dark band *anceps* 50
clarinetta 49
myiopitoides in part 51
— Bands may still be evident, but there is a strong tendency for more hyaline spots to develop so that the bands, becoming also thinner, are broken up and a broken reticulation is formed, but there is usually a hyaline spot or area in first posterior cell above lower cross-vein . . *myiopitoides* series 51
17. A very wide, darker band along costa and around apex of wing (Fig. 146) there are few smaller, hyaline or subhyaline spots on the band, but some larger, hyaline marginal spots; middle of wing with a paler, broad, more or less broken reticulation . . . . . *praetexta* 55
— Wing heavily infuscated from base to apex, with rather numerous, small, yellow, subhyaline spots, a few hyaline spots along costa and hind margin narrowly hyaline . . . . . *Mesoclanis*, in part 52

SPECIES GUIDE: *PAROXYNA sens.lat.* SERIES

18. A. One lower orbital, 4 long scutellars 7
Antoxyna gen.n. (*oxynoides* Bezzi)
— B. Two lower orbitals, 2 scutellars 19
Dioxyna Frey (*sororcula* Wiedemann)
Lethyna gen.n. (*gladiatrix* Bezzi)
(*Note:* (1) Care must be taken to make sure apical scutellars have not been broken off especially in species with short apicals when the alveoli are not easily seen. (2) If apicals are definitely absent and pattern at all banded with possibly a hyaline spot or space above lower cross-vein in first posterior cell, or labella are very long, cf. *myiopitoides*, 51.)
— C. Two lower orbitals, 4 scutellars 26
i. Two long and 2 short scutellars 27
Paroxyna Hendel (*ignobilis*) Loew, the genotype *tesselata* Loew)
Desmella gen.n. (*anceps* Loew)
ii. The 2 long apicals longer than 0·5 basals 52
Scedella gen.n. (*caffra* Loew)
Mesoclanis Munro (*dubia* Walker) 64

— D. Three lower orbitals, 4 long scutellars:
i. Head short (if anterior, smaller orbital is absent, arista is bare and frons pubescent) 71
Ptosanthus gen.n. (*helva* Loew)
ii. Head very long, parafacials exceptionally wide, arista pubescent, wing-pattern reticulate . . . . . *Deroparia* gen.n. (*reticulata* Munro)
(The last two have been included here for comparison)

19. Head elongate, parafacials wide, frons 1·5 long as wide, abdominal spots distinct, even if large (see also under *Dioxyna*) . . . . . *sororcula*
— Head of normal length, parafacials narrow, frons about as wide as long, abdomen usually brown or bronzy with narrow median grey stripe and grey on sides *gladiatrix* series (*Lethyna*) 20
20. Outer part of third posterior cell and usually base of wing hyaline 21
— A complete reticulation or infuscation over third posterior cell, base of wing infuscated or yellow hyaline 23
21. Stigma yellow, pattern a pale, much reduced reticulation, parafacials wider than usual, but head not elongate . . . . . *evanida*
— Stigma black, or with a small to large hyaline or yellowish spot, pattern darker, although reduced, parafacials narrow 22
22. A more or less scattered, broken, broadly reticulate pattern, with a fairly conspicuous, irregular bar from apical area backwards along fifth vein, larger species, 4·5 mm., oviscape longer than pre-abdomen; apical black setae on terga 5 and 6 in female . . . . . *gladiatrix*
— Darker pattern on outer half of wing or confined to area between end of stigma and above fourth vein, faint, or a trace in discal and second posterior cells; a pronounced apical fork; small species, 2·0–2·5 mm.; oviscape about as long as pre-abdomen; apical black setae on tergum 6 only in female . . . . . *liliputiana*
23. A complete, well-defined, reticulate pattern, the diameter of the hyaline spots being generally greater than the width of the intervening reticulation . 24
— Wing completely infuscated, the pattern appearing less reticulate as diameter of hyaline spots generally less than intervening infuscation, and rather less clearly defined 25
24. A row of 5 or 6 rounded, or 1 or 2 more elongate, hyaline spots along lower side of sixth vein, ends of veins 3 and 4 distinctly divergent; larger species 3·5–4·5 mm. . . . . *aequabilis*
— No hyaline spots along lower side of sixth vein; ends of veins 3 and 4 parallel; smaller species, 2·5 mm. . . . . *nexilis*
25. Last portion of vein 3 gently curved forward, 3 and 4 at ends even somewhat convergent; apical black setae on terga 5 and 6 in female; larger species, 4·8 mm. . . . . *blaesa*
— Ends of veins 3 and 4 straight, parallel; apical black setae on tergum 6 in female; smaller species, 2·0 mm. . . . . *permodica*
26. (18c). Apical scutellars less than half basals in length (the apicals may become very small, or even very occasionally disappear, cf. *myiopitoides*) . . . 27
— Apicals more than, or not less than, half basals 52
27. Pattern reticulate sometimes more or less subreticulate or reduced; labella mostly not longer than mouth-opening *ignobilis* series (*Paroxyna*) 28
— Pattern banded or barred, if more hyaline spots develop, or if more or less reduced, pattern still discernably banded, or a hyaline spot above lower cross-vein in first posterior cell; labella very long, projecting well beyond epistome when drawn up . . *anceps-myiopitoides* series (*Desmella*) 49
28. A. Frontal stripe present, pattern evenly reticulate, usually pale. 29
— B. Frontal stripe present, pattern with 3–4 larger, darker spots or areas (at stigma, at end of marginal cell and below, at apex of wing, on upper and on lower cross-veins), the wing appearing speckled 33

— C. Frontal stripe absent, pattern evenly reticulate, or somewhat more irregular, or reduced to a more or less strongly marked, irregular, longitudinal bar from end of anal cell to tip of marginal 38

— D. Frontal stripe absent, pattern with 3 or 4 darker spots as above . . . 45

(*Note: Frontal stripe:* when present may be weak, but never, apparently, quite disappearing; when absent, frons is usually plain yellow, but a weak or even almost moderate stripe may develop in occasional specimens.

Reticulation: When even over the wing may be dark, but is often pale with usually the stigma and on costa along marginal cell darker, the base, in any case, rather paler; the pattern may be somewhat reduced. When there are darker spots, as above, the pattern appears speckled to the eye; there is some paler reticulation between, or the spots may become more isolated. In old, and especially reared specimens, and occasionally normally, the intensity of the spots is not so marked, and the male terminalia must often be examined for final identification.)

29. Legs yellow, hind femora may be slightly or up to two-thirds blackened; male tergum 9 swollen on sides . . . . . *siphonina* (Bezzi)

— Femora all black; male tergum 9 normal 29a

29a. Wing-base hyaline, only slight darkening in outer costal cell, reticulation defined and hyaline areas clear 30

— Infuscation or dark yellowness to extreme base, outer costal cell mainly dark with 2 lighter costal spots, reticulation rather diffuse 31

30. Three stripes on dorsum of thorax, the median usually weaker; pattern clear, reticulation large, pale, also stigma, and tending to reduction, or strongly marked and darker, hyaline spots fewer . . . . . *spinata*

— A single, wide, dark brown, median stripe, pattern less clearly defined, or with a tendency to 3 darker spots . . . . . *petulans*

31. Kink on vein 2 well beyond upper cross-vein; costal hyaline spots larger and fewer, 2 large hyaline spots in marginal, the outer sometimes more or less divided in two, and 2 large, more or less confluent spots below in submarginal . . . . . *fenestrata*

— Kink on vein 2 just beyond upper cross-vein, 3 usual spots in marginal or 2–3 small spots between inner and outer 32

32. Mesonotum wider, width/length, 9:8, distinctly blackened, dust blackish with slate-grey stripes united behind, basal infuscation on wing stronger *shiraensis*

— Mesonotum narrower, about as long as wide, width/length, 8:9 or 8:8, brownish, dust greyish, stripes brown . . . . . *argentata*

(*a*) Hyaline spots on wing larger . . . . . form *argentata*

(*b*) Hyaline spots very small and numerous . . . . form *dispertita*

33. (28b). Legs yellow . . . . . *eain* Hering

— Femora black 34

34. Wing-pattern well defined, with 3 marked darker spots, 2 clear but not always fully separated hyaline spots in first basal cell 36

— Wing-pattern paler, almost unicolorous in some specimens, the darker spots less conspicuous, hyaline spots in first basal and inner end of submarginal undefined; a single, broad brown stripe on thorax 35

35. Two hyaline spots below end of vein 2 and other spots of pre-apical band separated; outer margin of second posterior cell with a broadly infuscated band on which 3 or 4 small hyaline spots, a larger one in inner corner *petulans* sp. n.

— Spots below end of vein 2 united also mostly with those below to form an almost complete, pre-apical, hyaline band; dorsal stripes variable . *ignobilis* pp.

36. Two separated spots below end of vein 2, or the spots rarely touching; sternite 5 in male with deep indent, 0·6 length; oviscape short, 0·3 wing-length (for

further data on male terminalia of this and those under 37, see species notes) . . . . . *umbritica* sp. n.

— A single, large, hyaline spot below end of vein 2 37

37. Wing-pattern (Fig. 104) practically reduced to 3 dark spots with little reticulation between, or forming a V; indent of sternite 5 male moderate, 0·5 length; oviscape shorter, 0·2 wing-length . . . . *anomalina* (Bezzi)

(*a*) If lower border of head markedly longer than high at vertex, see *munroi* Hering

(*b*) If frontal stripe very weak, cf. *compta* 45a

— Pattern with some reticulation between the dark spots and generally more uniformly dark all over, including basal spots.

(*a*) Pattern (Fig. 106) almost anchor-like, but rather broken with more numerous, small hyaline spots on the dark areas, especially below stigma; frontal stripe strong; indent sternite 5 male deep, 0·6 length . . . . . *anchorata*

(*b*) Pattern (Fig. 107) more compact, few if any hyaline spots on dark areas; frontal stripe weaker; indent sternite 5 male moderate, 0·5 length . . . . . *nacta* sp. n.

(*c*) If pattern tends to be paler and isolated basal spots less conspicuous, frontal stripe weak, specimen may be under-coloured, or cf. *ignobilis* 47

38 (28c). Femora yellow, mid pair always so, hind may be blackened, in male more often black on basal three-fifths, at times front femora slightly blackened; larger species, 4·0–5·5 mm., with very long proboscis and very pale wing-pattern, frontal stripe usually present (see 29) . . . *siphonina*

— Femora black, generally smaller species 39

39. Reticulation complete, or infuscation to base with more or less obscure reticulation 40

— Reticulation reduced, leaving a marked, irregular bar, bounded by more or less complete hyaline spots, from apical area along vein 5 to, or towards, anal cell 44

40. Base of wing clear or yellowish hyaline, reticulation clear and defined, with larger, more regular hyaline spots, rather pale to moderately dark . . 41

— Wing infuscated to base, hyaline spots smaller and more obscure . . . 42

41. A single, large, hyaline spot at base of first posterior cell before lower cross-vein; dorsum of thorax not striped or 3 faint stripes; pattern usually pale with larger spots, or, if darker, spots rather smaller; labella rather longer than mouth-opening; aedeagus with granular plate (Fig. 99); oviscape longer, 0·3 wing-length; apical black setae only on tergite 6 in female *granulata* sp. n.

— Two or 3 small, more or less irregular, hyaline spots at base of first posterior cell before lower cross-vein; labella as long as mouth-opening, not projecting when drawn up; wing-pattern usually very pale; oviscape very short, 0·13–0·18 wing-length; apical black setae on tergites 5 and 6 in female *péringueyi*

42. Pattern distinctly but irregularly reticulate, with a few large, and more numerous small, hyaline spots along the middle length, base less darkly infuscated *salina*

— Wing rather darkly infuscated all over, pattern less defined, less reticulate, hyaline spots fewer and less sharply margined, almost none along middle length 43

43. Dorsum of thorax brown-dusted . . . . . *brunalata*

— Dorsum of thorax brown in middle, grey on sides . . . . . *edwardsi*

44. Head and appendages black; labella about as long as mouth-opening, not projecting when drawn up . . . . . *saltoria*

— Head and appendages yellow; labella longer than mouth-opening, projecting, wing-pattern somewhat different in the sexes . . . . . *sigillata*

45 (28d). Legs quite yellow . . . . . *astuta*

— Femora black or mainly black 45a

45a. Wing-pattern (Fig. 122) reduced to a V as in *anomalina*; aedeagus like *ignobilis* but with apical hood; indent sternite 5, 0·5 length; frontal stripe may occur *compta*

— The variable, speckled wing-pattern generally rather pale, but variable in intensity, the dark spots tending to be less conspicuous especially in pale or teneral specimens, a single or a double hyaline spot below end of vein 2 and a larger, hyaline spot at base of first posterior cell before lower cross-vein. Of the four following species, only the males can as yet be definitely separated on the terminalia 46

46. Wing-pattern somewhat darker and slightly more evenly coloured; male: sternite 5 indent shallow; aedeagus (Fig. 134) with apical hood . *mitrata*

— Male, indent sternite 5 moderate to very deep, 0·5 length or more . . . 47

47. Indent sternite 5 (Fig. 82) very deep, about 0·8 length; aedeagus (Fig. 129) bud-like . . . . . *ignobilis*
(*a*) See notes under *ignobilis* and *guttata* (Wiedemann).

— Indent moderate, about 0·5 length 48

48. Aedeagus (Fig. 130) with flared vesica which may be less expanded in some preparations; sternite 5 (Fig. 83); flanges on tergum 9 short . . *eflorata*

— Aedeagus (Fig. 131) moderate vesica with apical hood; flanges appear as a pair of sharp points seen postero-dorsally . . . . . *kanabaina*

49 (27). Abdomen shining black, lightly grey-dusted, no spots, long white hairs on hind margins of terga almost as long as terga; palpi very long and thin, 0·8 height of head; oviscape 1·5 pre-abdomen, 0·5 wing; generally larger species, 4–6 mm. . . . . *clarinetta*

— Abdomen with double row of dorsal spots, sometimes coalesced or else hardly apparent, pubescence short as usual, no long hairs; oviscape about as long as pre-abdomen or shorter; species to about 4 mm. 50

50. Wing-pattern of 3 well-defined, heavy to very heavy transverse bands arranged YII, the outer margin of the Y-band almost in line with the lower cross-vein, hyaline spots seldom on bands, rarely an apical hyaline spot; strong dorso-central stripes on thorax and a strong frontal stripe; oviscape about as long as pre-abdomen, 0·3 wing . . . . . *anceps*

— Wing pattern of 3 rather irregular bands, commonly with additional hyaline spots, and tending to reticulate (see couplet 16); usually an apical hyaline spot; or bands tend to evanesce 51

51. A strong, complete, fuscous band from costa covering basal cross-vein and end of anal cell; pattern generally more reticulate in appearance . . *conyzae*

— No well-marked basal band, at most some isolated, even if strong, fuscous spots at base of wing. A complex series of possibly 3 or 4 species that cannot be separated on the wing-pattern; not considered in detail here *myiopitoides* series

52 (26). Parafacials narrow, labella shorter, 0·5–0·7 mouth-opening . *Scedella* 53

— Parafacials wide, head of more normal length but appearing rather elongate; labella longer, 1·25 mouth-opening . . . . . *Mesoclanis*

53. No apical hyaline spot, pattern definitely reticulate 54

— An apical hyaline spot, rarely absent; pattern reticulate-banded . . . 55

54. Wing-pattern more evenly and darkly reticulate; frons longer than wide; oviscape shorter, 0·36 wing-length; pre-aedeagal setulae on large tubercle *glebosa*

— Wing-pattern paler in middle; frons square; oviscape longer, 0·44 wing-length (no male available) . . . . . *pilosa*

55. Wing-pattern reticulate, or reticulate-banded, or reduced 56

— pattern with a wide, almost 0·3 width of wing, dark brown bar from near base along costa and around apex to tip of third posterior cell; 7 or 8 larger hyaline spots along wing-margin and a few small hyaline spots on the bar; middle of wing more or less hyaline, with paler, broader reticulation, the

area inside the "hook" variable, with larger less complete to smaller more complete hyaline spots . . . . . *praetexta*

56. Pattern reticulate, the median band hardly apparent; if pattern reduced, barely to be distinguished from other reduced pattern . . . . . *flecta*
— Pattern banded-reticulate or reduced 57
57. Femora black, or at least half blackened 58
— Femora yellow, or brown, or "tawny" 59
58. Second posterior cell not reticulate, the pre-apical hyaline bar almost complete, pattern at base of first posterior cell "8o" . . . . . *caffra*
— Second posterior cell with strong reticulation thus closing the hyaline bar below, pattern at base of first posterior cell "8o", or a single, vertical, oval spot above lower cross-vein . . . . . *sandoana*
59. Pattern much reduced, only remnants of reticulation outwardly, no transverse bar apparent, base of costa apparently dark (*sec* Hering)—cf. *evanida longiseta*
— Pattern well marked, even if more or less broken up 60
60. Dorsum of thorax golden brown dust, stripes apparent . . . . . *incurva*
— The dust slate-grey or distinctly bluish 61
61. Pattern well marked with strong median band 62
— Pattern more reticulate, tending to be more broken up, the median bar less marked, or pattern even more reduced 63
62. A well-marked, almost complete, pre-apical hyaline band; hind femora sometimes slightly blackened . . . . . *boxiana*
— A very heavy pattern, pre-apical band hardly apparent; legs "tawny" . . *cyana*
63. Wing membrane milky, pattern more reduced, less reticulation at base of first posterior cell only "8o", the outer "8" incomplete; dorsum of thorax with faint stripes; oviscape short, about as long as last 3 tergites of pre-abdomen . . . . . *kawandana*
— Pattern more complete and reticulate, inner end of first posterior cell with distinct "8o8"; dorsum of thorax with 3 moderately well-marked stripes; oviscape longer, about as long as pre-abdomen. There is a complex of species here, all much alike externally within the limits of variation; male terminalia must be examined and females only identified when with known males. The Indian *spiloptera* may belong here; see later notes.

MALES:

i. Pre-aedeagal swelling with 1 large, eversible group of setulae . . ii
— A double, or 2 groups, of such setulae; membrane on indent of sternite 5 with fine hairs iv
ii. vesica reduced, aedeagus with a series of sclerotised "rods" to apex: membrane on indent of sternite 5 with microsetulae . . . iii
— Vesica moderate, somewhat sclerotised and curved to an S-shape; membrane in indent with fine hairs . . . . . *flecta*
iii. Aedeagus laterally the various "rods" acuminate and curved dorsally to give a bird's-beak appearance . . . . . *dissoluta*
— Aedeagus laterally there appears a spatulate piece, wide at its apex, in ventral aspect this appears as a short, stout rod bent at the end *spatulata*
iv. Pre-aedeagal setulae in 2 elongate groups almost continuous with each other; no basal, transverse, sclerotised bar apparent in aedeagus; dorsum of thorax golden brown . . . *incurva*
— Pre-aedeagal setulae in 2 more irregular groups (but appearance may vary with the preparation), a strong, basal, transverse, sclerotised bar in aedeagus; dorsum of thorax bluish . . . . *caesia*

64. Wing-pattern reticulate with a conspicuous, subapical bar of large, rounded, hyaline spots and a similar area anally. The dark bands have relatively few, sometimes many, small hyaline spots; vein 3 with usually a few setulae at base . . . . . *dubia* group 65

— Wing with almost complete, blackish-brown infuscation, the hind margin more or less broadly hyaline and a few costal hyaline spots, but the disc with rather few to many yellowish, subhyaline spots or argents; vein 3 usually strongly setose . . . . . *cribripennis* group 68

65. First basal and upper half of discal cells never with any large hyaline spots, at most 2 large hyaline spots in lower half of discal on vein 5 . . . . *dubia*

— Large hyaline spots, extended from inner posterior area, in discal and first basal cells 66

66. Wing of normal shape, or even narrowed, not widened outwardly, the black bars with numerous to very numerous small, hyaline spots 67

— Wing decidedly shorter and wider (width/length, 0·45) and more rounded outwardly; only a few small hyaline to subhyaline spots on dark bars *ovalis*

67. Larger species, 4 mm., parafacials rather narrow, dorsal thoracic stripe strong, wing rather wider (width/length, 0·4) reticulation between bars more complete:
(*a*) Small hyaline spots on median bar less numerous, but a row on either side of vein 2 . . . . . *magnipalpis* ♂
(*b*) Small spots very numerous, breaking median bar in particular into lace-like pattern . . . . . *magnipalpis* ♀

— Smaller species, 3·5 mm., parafacials wide, dorsal thoracic stripe weak, wing rather narrower (width/length, 0·3). costa and hind margin more parallel, reticulation between bars more reduced so that bars more marked . *polana*

68. Hyaline area of hind margin with some broken reticulation; argents more numerous 69

— Hind margin quite hyaline, or at most 2 or 3 isolated dark spots; argents generally fewer 70

69. Dorsum of thorax with paler, less marked, median stripe; flange not dentate *cribripennis*

— Dorsum of thorax with strong, wide, dark brown, median stripe; flange dentate *bruneata*

70. The dark infuscation reaches hind margin at end of vein 5; large species, 4·5–5·5 mm. . . . . *optanda*

— Infuscation not reaching beyond lower, outer corner of discal cell, so that most of second and third posterior cells is hyaline; small species, 2·8 mm. *hyalineata*

71 (18d).[1] Frons pubescent, bristles mainly brown, wing-pattern with darker areas but variable . . . . . *Ptosanthus helvus* (Loew)

— Frons bare, bristles pale, pattern apparently evenly coloured reticulate—inclusion in Ptosanthus problematical . . . . (“*Euribia*”) *albina* Bezzi

TERMINALIA OF *PAROXYNA* SERIES

Munro, 1947, *Mem. ent. Soc. S. Afr.*, **1**: 73–82; 1950, *J. ent. Soc. S. Afr.*, **13**: 38.

During the present studies dissections have been made of the male abdomen as far as material has been available, sometimes even of a single specimen. A study of the female terminalia must remain for the future.

The sternites and the male genitalia generally are external characters but may be termed “hidden” since they cannot usually be examined, even in exceptionally well-preserved specimens unless they are dissected out and mounted on slides. The general details and methods are given in an earlier

[1] “*Camaromyia*” *acrophthalma* Bezzi, 1918, has 3 lower orbitals, but does not belong here as it has middle scapulars.

paper (Munro, 1947): These structures in the present group—*Paroxyna* s.l.—show a wealth of characters on which species and even genera may be identified and classified, especially when the more usual external characters are much alike and similarly variable.

Character amphimixis or overlapping is apparent, but there is some correspondence with the grouping made on wing-pattern and chaetotaxy. To a large extent, perhaps, characters, especially of the aedeagus, are highly specific, but, as is often the case, may appear or become less so when larger series of species are examined. In any case, the characters of the male terminalia cannot be considered the only, or necessarily the final, deciding factors in separating species.

Three points must always be kept in mind:

(1) that the objects (tergum 9, aedeagus, etc.) are three-dimensional and that a slight change in orientation may change the appearance; (2) that membranous parts (vesica) tend to be less stable, although they are on the whole remarkably constant; membranous projections, often with minute cornuti, often only become visible as the aedeagus is turned around; (3) that the condition of the original specimen must be noted; if teneral, the aedeagus may be much less sclerotised and appear different from a fully hardened one.

It is not intended to give here a detailed analysis but to indicate some of the more marked features and something of the correspondence with the general classification outlined in the guide to species.

Sternites. The widened, more or less trapezoid, sternite 5, may have a shallow to deep posterior indent with a gradual variation from 0·25 to nearly 0·9 its length; there is no correlation with the guide classification but the differences may be of use in separating species such as *eflorata* 0·33 and *ignobilis* 0·65. The sternite is usually asymmetrical and irregular in shape and outline, the indent varying in depth within a species—in *péringueyi* 0·33–0·41, in *ignobilis* 0·6–0·7; when very deep, as in *siphonina*, the sternite may be almost divided in two. The posterior corners may be angular to rounded.

Sternite 6 (Fig. 82), a strap-like piece, is simple, weaker or stronger in various species; however, in four (*spinata, fenestrata, argentata, shiraensis*) it shows a remarkable pair of anterior prongs (Fig. 80) so far not seen in any other Trypetid examined. It is interesting that they are placed together in the guide on somewhat weak wing-pattern characters.

Tergum 9: normally horseshoe shaped in rear view, and higher than wide, sometimes wider than high and the sides a little swollen, the lower parts narrowed; there may be patches of hairs on the inner side (Fig. 76). In *siphonina* it is exceptionally broadly rounded on sides and below (Fig. 94). The upper part of the posterior opening is closed by the membranous anal segments; the lower ends, the blunt cerci, are turned inwards. In lateral view the tergum is broadly rounded above, somewhat narrowed below.

Posteriorly flanges (Munro, 1950) may develop on either side above the cerci; they vary from ridges to conspicuous triangular projections that appear as a pair of points postero-dorsally and laterally cause the lower margin of the tergum to be bilobed. They may be observed on the pinned specimen and be of use in separating species, as *ignobilis* and *eflorata*. The margin of the flange is seldom smooth; it may be slightly and irregularly crenulate, more strongly so, or deeply notched or toothed. It is remarkably irregular from one specimen to another of a species, and even on one specimen the two may differ greatly in outline. In *argentata* (Fig. 79), *spinata* (Fig. 77) and *fenestrata* (Fig. 76) it seems as if the sides of the tergum are produced downwards, although in the first two the points may be developed from the flanges.

Prensisetae: the 2 enlarged setae (major and minor) at the ends of the twisted rods on either side within the lower margins of the posterior opening of tergum 9. In some species the rods appear "free" and are fairly easily dissected out, the setae subequal in size. There is, however, a tendency throughout the species for the minor to be reduced while the major is enlarged and becomes opposed to the end of the cercus forming a pincers or claw; at the same time the end of the rod becomes more sclerotised and more firmly joined to the inner edge of the tergum and more difficult to remove by dissection. Owing to the small size and location it is often difficult to discover the exact shape of the setae. In some the major appears as an ear-like projection.

Fultella: this internal structure and the supporting ring (11th segment) are not considered here. It may be noted that they are asymmetric, sometimes very markedly so, and show specific differences in their structure. The chief character and one that seems to be of major group (subfamily) value is that the right vane articulates with the corresponding posterior end of the ring through an intermediate rod or bar.

Aedeagus: the general appearance is like that in the diagram given earlier (Munro, 1947). It is a somewhat flattened structure and, as heretofore, examined and figured laterally. There is always a complex basal capsule from which a tube (? the end of the seminal tube) may project more or less into the vesica; the latter is mainly membranous, but often appears sufficiently sclerotised on certain folds, or when these are seen on edge, to give a constant picture from one specimen to another of a species and to be of specific value. Strong and more extensive sclerotisation may also be seen giving rise to various modifications, but the condition, teneral or otherwise, must be kept in mind. A darker area may be seen at the apex of the vesica caused by a thicker membrane characteristically bent over to form a "hood" (Figs, 114–117); it is more noticeable when the aedeagus is seen on edge. Simple to more complicated sclerotised rods and other features may develop and the actual membranous parts of the vesica almost disappear. In some species is, at the end of the tube, what appears to be a flattened plate, or in others a more or less flattened, granular mass.

Needless to say, the meaning and functions of the complex structures of the aedeagus have not been elucidated.

A pre-aedeagal swelling is occasionally marked, usually not, but there may be more or less extensive series of setulae; isolated setulae sometimes occur towards the middle of the phallosome.

ANTOXYA gen. n.

Agrees with Paroxyna in over-all characters but has one lower orbital bristle and the arista has rather long, fine, close-set pubescence; 4 scutellars.

Type species: *Euribia oxynoides* Bezzi, 1915, the following species.

Antoxya oxynoides (Bezzi) comb. n.

Euribia oxynoides Bezzi, 1924, *Bull. ent. Res.*, **15**: 138, in tabs. Munro, 1935, *Ann. Mus. nat. Hung. Zool.*, **29**: 153, Fig. 20.

Oxyna africana Hering, 1941, *Ann. naturhist. Mus. Wien*, **51**: 201, Taf. XX, Fig. 8 (syn. nov.).

(Not: *Paroxyna oxynoides* Hering, 1936, *Konowia*, **15**: 186, later re-named, *Paroxyna lux-orientalis* Hering, 1940, *Siruna Seva*, **1**: 16.)

KENYA: Aberdare Range, Katamayo, 8000 ft., x.1934, 1 ♀; Mt. Kinangop, 9000 ft., 1 ♂, 8000 ft., 1 ♂; Mt. Elgon, 10,500–12,500 ft., ii.1935, 1 ♀, "on" *Erlangia fusca*. UGANDA: Ruwenzori, Mobuku Valley, 7300 ft., xii.1934, 1 ♀; Kigezi district, Mt. Sabinio, 8000 ft., xi.1934, 1 ♀ (all *F. W. Edwards*); Kabale, 3.ix.1923, 1 ♀ (*H. Hargreaves*).

The species was not fully described by Bezzi, only appearing in his tables of the species of "*Euribia*". Here it was correctly stated to have only one lower orbital; unfortunately in the later description (Munro, 1935) incorrectly that there were two, but a pencil sketch of the head made at the time shows one.

Length, ♂ 3·6 mm., ♀ 4·0 mm.; wing, ♂ 4·2 mm., ♀ 3·6 mm.

Head: frons about half width of head and about as long as wide, a slight median stripe, 2 upper, 1 lower orbitals, ocellars very long, reaching to base of antennae, in some specimens a very slight trace of dark pubescence in front, lunule short, arcuate, antennae long, 0·9 face, third joint narrow, arista with close-set, rather long pubescence; face: parafacials moderate, 0·4 width of antenna, epistome slightly projecting, gena 0·25 height of eye, labella 0·75 mouth-opening.

Thorax: dorsum may be mostly brown-dusted with only a trace of stripes anteriorly, or more greyish with stripes somewhat stronger and the bristles on brown spots, pubescence pale, in male, some dark anteriorly, dorso-centrals half-way between suture and anterior supra-alars; legs: in female almost quite yellow, the hind femora blackened or all may be so, in male slightly to strongly blackened; wing-pattern (Fig. 47) more or less anchor-like; in three specimens somewhat less reduced than shown in figure of type (Munro, 1935) in which

there is a single large spot below end of vein 2; in the three specimens, one has two smaller separated spots, one has the spots approximated and in one a double figure-of-eight spot; scutellum flat, broadly yellow at end, 4 bristles, apicals 0·6 basals.

Abdomen dust golden-brown, slightly greyish at base, submedian dark spots large, rounded, sometimes less well marked, pubescence pale, dark on spots; oviscape 0·25 wing-length, shining-black, black pubescence. Male terminalia: tergum 9, cerci not strongly differentiated, turned inwards and rounded at ends; major prensiseta large, rounded at end, nearly half size of cercus to which opposed, minor half as long as major and a quarter the size; aedeagus (Fig. 48) with massive capsular base and small vesica, pre-aedeagal setae weak; sternite 5 trapezoid, the wider hind margin only gently concave, the membrane there with very fine pubescence.

There does not seem any reasonable doubt that *Oxyna africana* Hering is this species. Although *Oxyna* has only 1 lower orbital, other characters remove it from near *Paroxyna*.

DIOXYNA Frey

Frey, 1945, *Soc. Sci. Fenn., Comm. Biol.*, VIII, **10**: 62.

Erected on *Paroxyna sororcula* (Wiedemann) Hendel. Frey mentions the elongate body but not the head in particular, apparently basing the main distinction on the "isolated" position on account of the 2 scutellar bristles. However, he overlooked other species with 2 scutellars placed by Bezzi in Ensina and which could at least be placed in Paroxyna in a wide sense.

The chief characters that distinguish *sororcula* and its allies are the length of the head and absence of pre-aedeagal setulae; in the others the head is short, and such setulae are well developed so they are separated generically.

There has been difference of opinion as to whether there was only a world-wide species, *sororcula*. The closely allied forms of this, however, differ sufficiently to be considered more than subspecies. *D. thomae*, a later species, shows marked differences in tergum 9.

Of the species that may be recognised, *sororcula* occurs in the Ethiopian, Oriental and Australian regions; *thomae* and *picciola* in North America and *chilensis* in South America, but the absolute distinctions between the last two need further study.

A. Wing with a marked, more complete, infuscated pattern:
   i. Tergum 9 oval, of more usual shape; male, sternites (Fig. 53 *f*) broadly rounded, 5 with posterior corners very rounded . . . . *picciola*
   ii. Tergum 9 of peculiar shape, very wide posteriorly, bent laterally (*sec* Benjamin) . . . . . *thomae*

B. Wing-pattern mainly with dark spots along costa, otherwise appearing almost hyaline, but with dark microtrichial pattern and at times stronger

infuscation, in oblique light pattern appears about as dark as in *picciola*; male, sternites rectangular, 5 with posterior corners broadly angular (Fig. 53, *a–e*) . . . . . *sororcula*

C. Wing-pattern much reduced, even more than in *sororcula*, and apparently does not appear in oblique light (*sec* Hering) . . *chilensis* (Macquart)

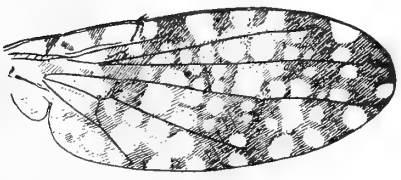

FIG. 47.—Wing.

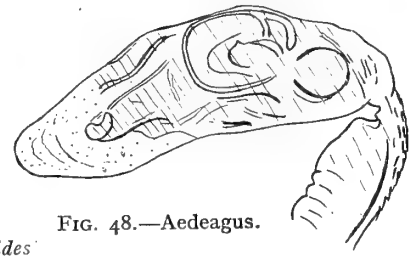

FIG. 48.—Aedeagus.

Antoxya oxynoides

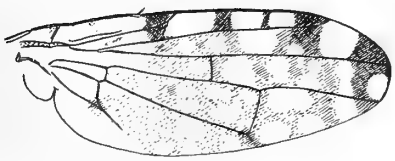

FIG. 49.—Wing.

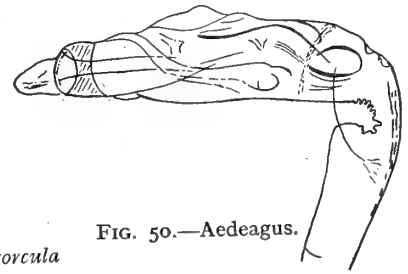

FIG. 50.—Aedeagus.

Dioxyna sororcula

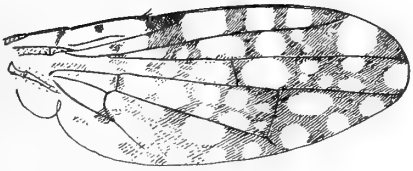

FIG. 51.—Wing.

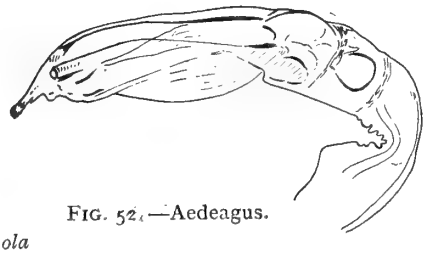

FIG. 52.—Aedeagus.

Dioxyna picciola

[**Dioxyna picciola** (Bigot) comb. n.]

Acinia picciola Bigot, 1857, in Ramón de la Sagra, *Hist. fis. polit. nat. Cuba*, **7**: 842, Plate 20, Fig. 10.

Paroxyna picciola (Bigot) Benjamin, *U.S. Dept. Agric., Tech. Bull.*, **401**: 42, Fig. 30, A–N. Aczel, 1949, *Acta Zool. Lilloana*, **7**: 289 (see for complete references).

Trypeta humilis Loew; *Ensina humilis* (Loew), synonyms.

Wing (Fig. 51).

The male sternites (Fig. 53 *f*) of the Costa Rica specimen are very rounded, of the Florida specimen rather less so (Fig. 53 *f*, dotted outline), but they are noticeably the same in general appearance; Benjamin's Fig. 30 J seems to have been drawn from a dry specimen. Aedeagus (Fig. 52).

The appearance of tergum 9 is much like that of *sororcula*, the flange almost absent. Benjamin's figures differ: in his 30K the lower points (cerci) seem too narrow and his 30L differs in that it shows a posterior blunt point below, while in all preparations made there is a short anterior point directed downwards and somewhat forwards.

I am indebted to Mr. F. S. Blanton for specimens from Florida, and to Dr. M. Hering for a pair from Costa Rica.

[Dioxyna chilensis (Macquart) comb. n.]

Ensina chilensis Macquart, 1843, *Dipt. exot.*, **4**: 3, subdiv. 230, 417, Plate 31, Fig. 11.
Paroxyna chilensis (Macquart) Aczel, 1949, *Acta Zool. Lilloana*, **7**: 286 (see for full references; he gives *Trypeta aurifera* Thomson, *Ensina aurifera* (Thomson) and *Paroxyna enigma* Hering as synonyms).
? *Euxesta sororcula* (Wiedemann) Loew, 1867, *Berl. ent. Zeit.*, 1867: 313 (Brazil).
? *Paroxyna sororcula* (Wiedemann) Aczel, 1949, *Acta Zool. Lilloana*, **7**: 289 (Bolivia).
? *Paroxyna sororcula* (Wiedemann) Malloch, 1934, *Pacific ent. Survey*, Publn. 7, Art. **14**: 200.

In the absence of specimens it can only be noted here that the chief distinguishing character of *chilensis* appears to be the reduced wing-pattern; it may prove to be the same as *picciola* but different from *sororcula*.

[Dioxyna thomae (Curran) comb. n.]

Ensina thomae Curran, 1928, Ins. Porto Rico & Virgin Is., *N.Y. Acad. Sci.*, 11, pt. **1**:70, Fig. 30.
Paroxyna thomae (Curran) Benjamin, 1934, *U.S. Dept. Agric., Tech. Bull.*, **401**: 41, Fig. 37, A–G.

The inclusion of this species here may be problematical. The specimens from Florida, U.S.A., examined by Benjamin show a very marked difference in the shape of tergum 9 (his Fig. 37 C, D); the wing-pattern shows a darker area at stigma and at end of marginal cell, but compare the figures of Benjamin and of Curran. Benjamin admits that more and better specimens from the type locality (St. Thomas Island) are needed to make sure of his identification.

Dioxyna sororcula (Wiedemann)

Trypeta sororcula Wiedemann, 1830, *Auss. zw. Ins.*, **2**: 509. Loew, 1861, *Berl. ent. Zeit.*, **5**: 256; 1862, *id.* **6**: 90.
Oxyna sororcula (Wiedemann) Czerny, 1902, *Wien ent. Zeit.*, **21**: 256; 1906, *id.* **25**: 254, Figs. 1, 2. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131, 134; 1908, *id.* **4**: 144, 200. Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 141; 1913, *Mem. Ind. Mus.*, **3**: 159; 1913, *Phil. J. Sci.*, D. **8**: 327. Bezzi and Lamb, 1926, *Trans. ent. Soc. Lond.*, **1925**: 555. de Meijere, 1914, *Tijdschr. v. Ent.*, **57**: 221. Brunetti, 1917, *Rec. Ind. Mus.*, **13**: 98.

Ensina sororcula (Wiedemann) Bezzi, 1918, *Bull. ent. Res.*, **9**: 32; 1920, *id.* **10**: 261; 1924, *id.* **15**: 135; 1924, *Ann. Mus. Hist. nat. Paris*, **30**: 89; 1924, *Ann. S. Afr. Mus.*, **19**: 548, Plate XIV, Fig. 97; 1928, *Dipt. Fiji Is.*, p. 117; 1928, *Ann. Tvl. Mus.*, **12**: 334. Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 90, Plate IV, Fig. 6 and Plate I, Fig. 13. Senior White, 1924, *Cat. Indian Ins.*, 4, *Tryp.*, p. 27. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 55; 1929, *Ann. S. Afr. Mus.*, **29**: 25. Shiraki, 1933, *Mem. Fac. Sci. Afric., Taihoku Imp. Univ.*, **8**: (*Ent. No.* 2) 462. Zia, 1937, *Sinensia*, **8**: 199, footnote.

Paroxyna sororcula (Wiedemann) Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 158. Lindner, 1928, *Konowia*, **7**: 30. Munro, 1934, *Amer. Mus. Nov.*, **739**: 3; 1935, *Arb. phys. angew. Ent.*, **2**: 263. Malloch, 1934, *Pacific ent. Survey Publn.*, 7, Art. **14**: 200. Hering, 1942, *Beitr. z. Fauna Perus*, 1, *Trypetidae*, p. 161; 1944, *Siruna Seva*, **5**: 8. Frey, 1936, *Soc. Sci. Fenn., Comm. Biol.*, VI, **1**: 92; 1939, *Arkiv. f. Zool.*, **31A**: 16. Aczel, 1949, *Cat. Tryp. Neotrop., Acta Zool. Lilloana*, **7**: 289.

Dioxyna sororcula (Wiedemann) Frey, 1945, *Soc. Sci. Fenn., Comm. Biol.*, VIII, **10**: 62; 1949, *id.* VIII, **16**: 27.

Ensina sororcula (Wiedemann) var. *madeirensis* Lindner, 1928, *Konowia*, **7**: 30.

Dioxyna sororcula (Wiedemann) var. *madeirensis* (Lindner) Frey, 1949, *Soc. Sci. Fenn., Comm. Biol.*, VIII, **16**: 27.

Ensina bisetosa Enderlein, 1911, *Zool. Jahrb. Syst.*, **31**: 455, Figs. Y, Z.

Ensina bisetosa Enderlein var. *nigrinotum* Enderlein, *op. cit.*, **31**: 456.

Ensina vacillans Wollaston, 1858, *Ann. Mag. nat. Hist.* (3), **1**: 115. Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 159.

Leptomyza varipennis v.d. Wulp, 1897, *Termesz. Fuzet.*, **20**: 143, Plate III, Figs. 3, 4. de Meijere, 1908, *Tijdschr. v. Ent.*, **51**: 131.

Oxyna varipennis (Wulp) Czerny, 1902, *Wien ent. Zeit.*, **21**: 256; 1906, *id.* **25**: 254, Figs. 1, 2.

Paroxyna timorensis Hering, 1944, *Siruna Seva*, **5**: 8.

Not this species:

Euxesta sororcula Loew, 1867 (Brazil), and *Paroxyna sororcula* Aczel, 1949 (Bolivia), are probably *chilensis*.

The species was described as *Trypeta sororcula* from Teneriffe, but there has been much diverse opinion as to its specific identity. Some authors (Hendel, 1927, Shiraki, 1933, and Frey, 1936–1949) have considered there was only one world-wide species, but the general trend seems to be that at least *sororcula* as represented in Africa and the East is specifically different from the American forms; unfortunately authors do not always give clear reasons for an opinion.

As far as may be judged the main difference (or apparent difference) taken into account has been variation in the infuscation of the wing-pattern. This may indeed be taken as an indication, but might be misleading if the origin of a specimen were not known. Specimens of the North American *picciola* certainly show a more marked infuscation even in transmitted light in which *sororcula* shows an apparently reduced pattern, but the full pattern appears in oblique light as dark as in *picciola*.

The darker costal spots are characteristic of the wing-pattern, which is variable in detail; the femora vary normally from mainly black to mainly yellow, and even the head may be shorter in some specimens.

Oviscape about 0·25 wing-length. It often becomes flattened and *timorensis* Hering may have been based on a specimen in which it was very much so.

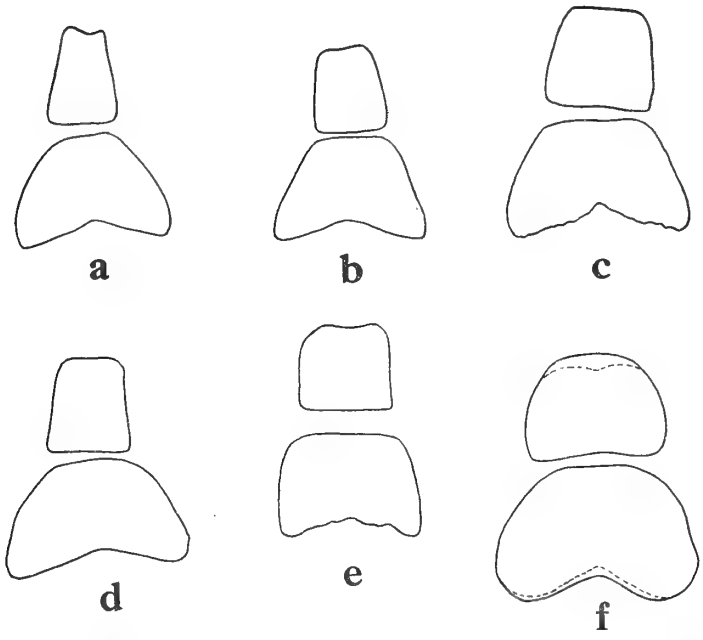

FIG. 53.—*Dioxyna sororcula*: sternites 4 and 5 of specimens from (*a*) Teneriffe, (*b*) Eritrea, (*c*) Pretoria, (*d*) Formosa, (*e*) Brisbane. *D. picciola:* (*f*) Costa Rica dotted outline, Florida.

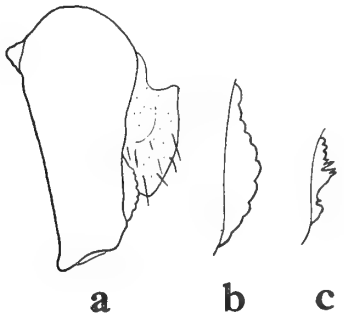

FIG. 54.—*Dioxyna sororcula*: tergum 9, (*a*) lateral view, (*b*) flange, Pretoria, (*c*) Brisbane.

Male. Differences in the shape of the sternites between *sororcula* and *picciola* appear to be significant (Figs. 53 *a–f*). In the latter they are markedly rounded, in the former generally angular. In *sororcula* too there is considerable variation in shape, even from one locality (South Africa), but whether any particular shape occurs regionally there is not enough material available to show. In the Teneriffe specimen, sternites 3 and 4 are markedly narrower, in others wider and more or less square.

Tergum 9: cercus a broad finger-like process turned inwards, in posterior view marked at most by a gentle concavity on the lower outline of the tergum; the lower side of the cercus is flattened and drawn rather downwards or somewhat anteriorly so that in lateral view the lower margin of the tergum (Fig. 54 *a*) shows a short point directed more or less antero-ventrally but not posteriorly. There is a very short, very irregular and variable flange; in a South African specimen it is crenulate (Fig. 54 *b*), but the one opposite in the same specimen has sharp points; in the Brisbane specimen the flange is much smaller with rather longer points. Aedeagus (Fig. 50) rather elongate, the capsular base short, the sclerotising varying with the condition of the specimen; there is a long tube to the apex of the vesica where the membrane may be somewhat thickened to form around the end of the tube a marked darker and rather wide ring, or this ring may be less conspicuous. Prensisetae, major large, minor small.

Biology and Distribution

The larvae of *Dioxyna sororcula* live in the seeds of *Bidens pilosa*, one in a seed; authors merely state that they live in the flower. Adults may become very abundant and numerous specimens are usually found in general collections of African Trypetidae from the Cape to Egypt and Eritrea; curiously, however, there appear to be no records, nor have I seen any specimens from West Africa.

I am indebted and thank Señor J. M. Fernandez for specimens from Teneriffe; Mr. F. A. Perkins from Brisbane, Queensland; and the late Dr. Walther Horn from Formosa. African material has accumulated from various sources; Mr. G. De Lotto from Eritrea, the Coryndon Museum from Kenya and many others.

It is not necessary to include here all other African material available; the British Museum records are:

UGANDA: Ruwenzori, Mt. Karangora, 9900 ft., 1.ii.1935, 1 ♂, 3 ♀; Namwamba Valley, 8300 ft., 1 ♀; Kilembe (abundant among *Bidens pilosa*), 9 ♂, 3 ♀ (*F. W. Edwards*); Kilembe, 4500 ft. light trap, 1 ♂ (*F. W. Edwards*); Karumba, 4500 ft., 1 ♂; Kyazumba, 4500 ft., 2 ♂, 1 ♀ (*D. R. Buxton*); Kigezi district, Umbarara, xi.1934, 2 ♂; Mt. Mgahinga, 8000 ft., 1 ♀ (*F. W. Edwards*); Mabungo Camp, 6000 ft., 15 ♂, 11 ♀; Mt. Sabinio, 11,000–11,500 ft., 1 ♀ (*J. Ford*); Bulambuli, 9500 ft., 8.viii.1934, 1 ♂ (*J. Ford*); Imatong Mts., 10,000 ft., ii.1936, 1 ♀ (*D. R. Buxton*). KENYA: Aberdare Range, Mt. Kinangop, 8000–10,000 ft., xi.1934, 1 ♂,

1 ♀; Nyeri Track, 10,000 ft., 1 ♀; Chania Falls, 4000 ft., 1 ♀; above Nakuru, 9300 ft., 6.iii.1935, 1 ♀ (*F. W. Edwards*).

Non-African Records

As has been noted, specimens from Formosa and from Brisbane, Queensland, are certainly *sororcula*; most probably Indian records are also this species, but its distribution throughout the Oriental region must await the collection and critical examination of more material. Malloch, 1934, states that he was not sure whether specimens from the Marquesas Islands were this or the South American species.

LETHYNA gen. n.

Agreeing in general with *Paroxyna* s.s., this genus has a short head, 2 lower orbital and 2 scutellar bristles. As noted under Dioxyna, the chief differences are the short head and spinulose pre-aedeagal patches. Known species are from Africa, but some may occur elsewhere. Care must be taken to make sure that apical scutellars are absent and not merely broken off as may happen in some species in which they are small.

Type species: *Ensina gladiatrix* Bezzi.

Male terminalia of five species have been examined. Tergum 9 in three, *gladiatrix*, *liliputiana* and *permodica*, is normal; in two, *nexilis* and *aequabilis*, the sides are swollen below with more or less marked hair-patches on the inner side; flange absent or not evident. Aedeagus usually elongate with reduced vesica, pre-aedeagal swelling not marked or moderate, spinulae usually in two patches or almost all around (absent in *Dioxyna*).

Lethyna gladiatrix (Bezzi) comb. n.

Ensina gladiatrix Bezzi, 1920, *Bull. ent. Res.*, **10**: 261; 1924, *id.* **15**: 135; 1924, *Ann. S. Afr. Mus.*, **19**: 548, Plate XIV, Fig. 98. Munro, 1929, *Ann. S. Afr. Mus.*, **29**: 25.

A larger species, ♂ 2·8–3·5 mm., ♀ 4·3–5·1 mm.; wing, ♂ 2·7–3·5 mm., ♀ 3·8–4·3 mm.; oviscape 1·7–1·75 mm.; pre-abdomen, ♀ 1·2–1·5 mm.

Head: length, height, width, 10:7·5:10. The species may be recognised by the length of the oviscape and the wing-pattern; there are 2 lower orbitals and 2 scutellars. The pattern on thorax and abdomen is variable; on dorsum of thorax mainly a broad bronzy stripe on to scutellum, in front it divides to a greater or less extent into 3 stripes, sides slightly bronzy, grey between; the abdomen has more often a pair of wide, variable, bronzy, submedian stripes, a grey median stripe and grey on sides, more distinct, large submedian spots may develop. Wing (Fig. 55): a strong, irregular, reticulate, outer pattern characterised by a prolongation basally over vein 5 to end of anal cell; this bar is variable, and may be more or less broken up by hyaline spots, especially in

Port Elizabeth specimens; it is hardly indicated in Bezzi's figure. Oviscape 0·4 wing-length. ♂: sternite 5 with moderate indent, 0·5 length, posterior corners angular, membrane in indent with minute hairs arranged in twos and threes in more or less concentric rows; tergum 9 normal, higher than wide, cerci short, broad, bluntly rounded, major prensiseta large, opposed to cercus, minor small, narrow, pointed; lateral outline narrowed and rather pointed below, but no projecting point; aedeagus (Fig. 61), capsular portion elongate, vesica very small, pre-aedeagal swelling flattened with a patch of spinulae on either side.

The female type in the British Museum is from Ululndi in Zululand and may have been taken on the Ubombo Mountains. I have the East London male identified by Bezzi in 1924 (*Ann. S. Afr. Mus.*), the other male is in the South African Museum.

The following specimens agree with the East London male:

South Africa: Cape Province: Port Elizabeth, 15.vii.1947, 1 ♂ (*H. K. Munro*); 19.ix.1950, 1 ♂, 3.viii.1950, 1 ♀, 3.ix.1950, 1 ♀ (*C. G. C. Dickson*); ix.1950, 1 ♀ (*G. C. Clark*). Natal: Margate, ix.1934, 1 ♂ (*W. E. Marriott*); Drakensberg: Loteni River, vii.1941, 4 ♂, 2 ♀; Cathkin Peak, vii.1942, 1 ♀; Umlambonja River, vii.1934, 2 ♀; Rockeries, 6.vii.1938, 1 ♀; Natal National Park, vii.1945, 1 ♀; Cathedral Peak area, vii.1946, 3 ♀ (*W. E. Marriott*); Cathedral Peak area, 12.xii.1950, 4 ♂, 3 ♀ (*H. K. Munro*) and i.1951, 6 ♂, 2 ♀ (*D. J. B. Killick*), the last two lots reared from flowers of *Helichrysum tenax*. Basutoland: Molomoshoek, iii.1944, 1 ♀ (*H. K. Munro*). Uganda: Mt. Elgon, between Butandiga and Bulambuli, 8000 ft., 7.viii.1934, 1 ♀ (*J. Ford*) (this last specimen quite like those from South Africa).

[Lethyna liliputiana (Bezzi) comb. n.]

Ensina liliputiana Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 549, Plate XIV, Fig. 99; *Bull. ent. Res.*, **15**: 136. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 56; 1929, *Ann. S. Afr. Mus.*, **29**: 26.

A small species, 2·0–2·25 mm. The types are from Prospect, Cape Province; there are also specimens in the Pretoria collection from Port Elizabeth, East London, Grahamstown in the Cape; Molomoshoek, Basutoland and Drakensberg, Umlambonja River, Natal. Those from Port Elizabeth were reared from flowers of *Helichrysum subglomeratum*, September 1949, C. G. C. Dickson.

The wing (Fig. 56) in general appearance is rather like that of *sororcula*; the pattern is somewhat reduced, the darker parts in the area between the end of stigma to apex above vein 4, or somewhat into second posterior cell, faint inside line of lower cross-vein with paler spots in discal and first basal cells, outer portion of third posterior clear hyaline with pale microtrichiae. Abdomen with broad, brown submedian stripes, a moderate median stripe and sides grey.

Male: sternites wider than long, 5 wide, posterior corners rounded, indent shallow; tergum 9 posteriorly rounded, laterally wide above, pointed below, prensisetae wide apart, major opposed to cercus, minor very small, cerci broad, blunt, a very short, crenulate flange; aedeagus (Fig. 62), basal portion shows a complicated series of rods narrowed apically to an open ring, beyond which projects what appears to be a wide, more or less sclerotised tube, the vesica not apparent; there is a patch of setulae on either side of a moderate pre-aedeagal swelling.

Lethyna permodica sp. n.

UGANDA: Kigezi district, Mt. Muhavura, 10,000–12,000 ft., xi.1935. Holotype ♂, allotype ♀, paratypes 1 ♂, 1 ♀ (*F. W. Edwards*); Mt. Muhavura, 10,500 ft., 1 ♂; Lake Mutanda, 6000 ft., 20.xi.1934, 1 ♂ (*J. Ford*).

Length, ♂ 2·0 mm., ♀ 2·6 mm.; wing, ♂ 2·2 mm., ♀ 2·25 mm.

Head yellow; length, height, width, 6:6:10; posteriorly black to eye-margin, slight grey dust, beard weak, pale yellow, postorbitals a row of black setae, pale bristles not differentiated, but in one specimen a single pale brown one, post-ocular and outer vertical pale brown; frons flat, ochraceous, vertex, black ocellar dot and sides silvery dusted, as long as wide, a little narrowed in front, 0·55 width of head, bare, bristles black, 2 lower orbitals, the hind upper pale brown, ocellars as long as lower orbitals; lunule short, ochraceous; antennae 0·75 face, ochraceous or blackened, third joint, width 0·4 length, arista micropubescent; face: epistome projecting 0·3 width of antennae, facialia and genae silvery dusted, bristle pale yellow, haustellum about as long as mouth-opening, labella a little shorter, palpi 0·75 labella.

Thorax black, dorsum; grey dust on sides and in front, brown on centre and behind, in female a more defined, broad, brown stripe, pubescence pale yellow, sparse; pleura and postscutellum black with slight grey dust; dorso-centrals at suture, pteropleural brownish; halteres yellow; squamae brownish; upper wide, lower narrow; scutellum brown dust, length half width, 2 bristles three times length of scutellum; legs black, distal ends of femora barely yellow or ferruginous, tibiae distal ends more or less ferruginous, tarsi blackish ferruginous; wing (Fig. 57) the palely infuscated reticulation not pronounced, there being relatively few, almost subhyaline or white microtrichial spots (in one Muhavura female rather more hyaline spots in first posterior cell), stigma black, ends of veins 3 and 4 subparallel, end of anal cell square or lower angle barely a broad point.

Abdomen black, brown tergal spots forming wide stripes separated by a narrow median grey stripe and grey on sides; pubescence sparse, brown on brown, pale whitish on last tergum, white on hind margins of terga 3 and 4, apical bristles black, short, weak, longer and stronger in female where on terga 5 and 6; oviscape 0·75 mm., 0·3 wing-length; venter black, grey dusted.

Male: very like *liliputiana*; sternite 5 posterior corners rounded, indent shallow; tergum 9 rounded, cerci broad, blunt; major prensiseta opposed to cercus, minor very small; aedeagus lost from preparation.

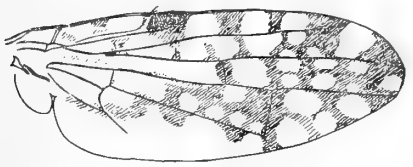

FIG. 55.—*gladiatrix.*

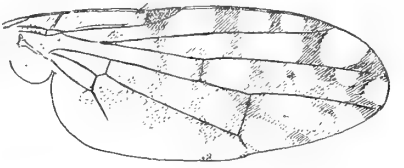

FIG. 56.—*liliputiana.*

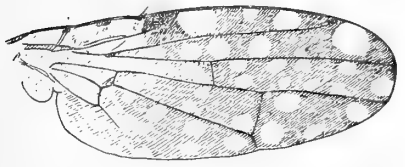

FIG. 57.—*permodica.*

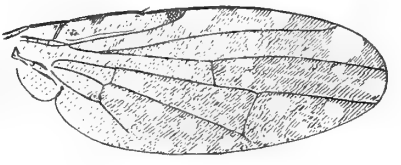

FIG. 58.—*blaesa.*

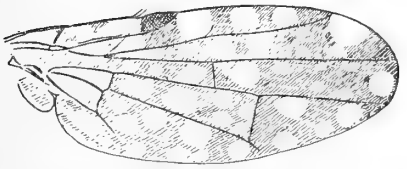

FIG. 59.—*nexilis.*

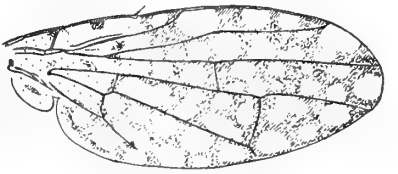

FIG. 60.—*aequabilis.*

Lethyna spp., wings.

Lethyna blaesa sp. n.

UGANDA: Kigezi district, Mt. Mgahinga, 10,000–11,000 ft., 22.xi.1934. Holotype ♂, allotype ♀; Mt. Muhavura, 10,000–12,000 ft., paratype ♀ (*F. W. Edwards*).

Length, ♂ 4·0 mm., ♀ 4·5 mm. (larger ♀ 4·8 mm.); wing, ♂ 4·2 mm., ♀ 4·4 mm.

Head: length, height, width, 7:7·5:10; yellow, behind black to eye, a pair of yellow spots behind vertex, shading to yellow of genae below; postorbitals 2 or 3 yellow bristles in a row of black setae, beard a few pale hairs; eye distinctly but sparsely pilose; frons deep yellow, silvery dusted across vertex and on sides and a very faint trace of a median silvery stripe, as long as wide, a little narrowed at antennae, 0·45 width of head, a trace of pubescence, 2 lower orbitals, ocellars strong; lunule moderate, ochraceous; antennae deep yellow, strongly blackened in 2 females, 0·8 face, third joint width 0·7 length, arista blackish, micropubescent; face yellow, epistome projecting 0·3 width antenna, parafacials narrow; labella and haustellum a little shorter than mouth-opening.

Thorax black, dust brown, grey in front with slight indication of stripes; humeri slightly yellowish behind; dorso-central bristles slightly behind suture, pteropleurals yellow; scutellum brown, length half width, the 2 bristles nearly three times length of scutellum; halteres yellow; squamae yellow, upper wide, lower narrow; legs: femora black, ends ferruginous, tibiae, fore and mid slightly blackened on proximal half, hind black on proximal two-thirds, tarsi ferruginous; wing (Fig. 58) a pale, fairly uniform infuscation, extreme base yellow hyaline, a rather conspicuous, rounded apical spot, and a larger one below end of second vein, and a few rather small, ill-defined, subhyaline spots representing the usual reticulation, hardly apparent at all in discal and first posterior cells, a relatively large, pale spot in stigma, in marginal cell a larger basal spot and 2, widely separated, partly formed, outer spots.

Abdomen black, sides and median stripe grey, brown tergal spots forming undefined, wide, stripes, pubescence pale yellow, brownish on the brown, apical black bristles on tergum 5 in male, on 5 and 6 in female; male terminalia black, grey-dusted; oviscape 1·3 mm., 0·3 wing-length, polished black, black pubescence; venter black, grey-dusted. Male terminalia not dissected.

Lethyna nexilis sp. n.

UGANDA: Kigezi district, xi.1934. Holotype ♂, allotype ♀; Mt. Muhavura, 10,000–12,000 ft., 18.xi.1934, 2 ♂ paratypes (*F. W. Edwards*); Imatong Mts., 10,000 ft., ii.1936, 1 ♂ (*D. R. Buxton*).

Length, ♂ 2·7 mm., ♀ 3·3 mm.; wing, ♂ 2·8 mm., ♀ 3·1 mm.

Head yellow; length, height, width, 7:8:10; behind black to eye-margin, grey-dusted, beard a few pale yellow hairs, postorbitals a row of black setae, only outer verticals and postoculars light brownish; frons deep yellow, sides, vertex and black ocellar dot silvery-dusted, flat, as long as wide, at vertex 0·5, at antennae 0·35 width of head, bare, 2 lower orbitals, ocellars strong; lunule short, yellow; antennae 0·8 face, orange to ferruginous or more or less blackened, joint 3, width 0·6 length, arista blackish brown, micropubescent; face: epistome slightly projecting, parafacials and genae silvery-dusted, former narrow, latter 0·2 height of eye, bristle pale yellow; proboscis yellowish, labella and haustellum about equal length, a little shorter than mouth-opening, palpi about 0·6 labella.

Thorax: dust dense brown, grey on sides, stripes barely indicated; pubescence sparse, pale yellow; pleura and postscutellar area black with moderate grey dust; dorso-centrals at suture, pteropleural brownish; halteres yellow; squamae yellow, upper wide, lower narrow; scutellum brown-dusted, slight grey dust on centre at base, length half width, the 2 bristles three times length of scutellum; legs black, ends of femora ochraceous, fore tibiae ochraceous or barely blackened, mid slightly blackened in middle and hind rather strongly; tarsi ochraceous; wing-pattern (Fig. 59) a pale reticulation, hyaline spots

relatively larger and fewer, especially in male, reticulation in discal and third posterior cells more marked in female, no row of spots below sixth vein, or slightly paler there or an oval spot; stigma black.

Abdomen dust dense, mainly brown but variable owing to coalescence of tergal spots, grey on sides and a median stripe; pubescence brown, with some longer, white; apical bristles black, rather short; oviscape 1·0 mm., 0·3 wing-length, about as long as pre-abdomen, shining black, mid-joint black, aculeus orange.

Male: sternite 5 wide, posterior angles broadly rounded, indent moderate with bare membrane. Tergum 9 (Fig. 66), laterally oval, cerci visible below, no flange; posteriorly wider than high, swollen on sides, flattened below on level of prensisetae, the concave surfaces with minute, fine hairs, cerci somewhat constricted off and project downwards and inwards at about an angle of 30°; major prensiseta large and opposed to cercus, minor small, pointed. Aedeagus (Fig. 63) elongate, vesica reduced, moderate pre-aedeagal swelling less spherical, strong setulae fewer but extending about three parts round—in figure those in dotted line on lower side in preparation.

Lethyna aequabilis sp. n.

Distinguished by the hairy concave areas on the lower posterior aspect of tergum 9 in male.

KENYA: Mt. Elgon, 10,500–12,500 ft., ii.1935. Holotype ♂, allotype ♀; paratypes 7 ♂, 5 ♀, on flowers of *Helichrysum ? nandense*; 1 ♂, 1 ♀, on flowers of *Helichrysum formossissimum*; 1 ♂, 1 ♀, Heath Zone, 10,500–12,500 ft. UGANDA: Kigezi district, Mt. Sabinio, 8000 ft., 2 ♀, on flowers of *Helichrysum nandense* (*F. W. Edwards*).

Length, ♂ 3·4 mm., ♀ 4·5 mm.; wing, ♂ 3·5 mm., ♀ 4·0 mm.

Head: length, height, width, 7·5:8:10; yellow, posteriorly black to eye-margin, shading to yellow below, beard sparse, short, yellow, 1 or 2 yellowish postorbitals in row of fairly long, black setulae; frons flat, deep yellow, no median stripe, as long as wide, a little narrowed in front, 0·5 width of head, 2 lower orbitals, occasionally an addition, fine one, ocellars strong; black ocellar dot, vertex, sides of frons, facialia and genae silvery-dusted, facialia appearing bare seen from below; no pubescence on frons; lunule short, yellow; antennae 0·9 face, yellow or more or less blackened, joint 3 twice as long as wide, arista blackish brown, micropubescent; face yellow, epistome projecting half width of antenna, parafacials narrow, 0·4 third antennal joint, genae 0·3 height of eye, bristle pale yellow; proboscis yellow, labella and haustellum about equal length, mouth-opening a little longer, palpi yellow, 0·6 labella.

Thorax black, dorsum densely grey-dusted, brownish posteriorly and median and dorso-central stripes anteriorly, or brown more extensive and grey only in front and on sides, pubescence pale yellow, bristles black, pteropleural

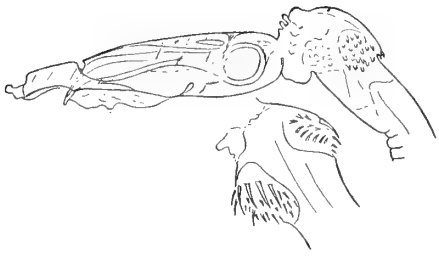

FIG. 61.—*gladiatrix*.

FIG. 62.—*liliputiana*.

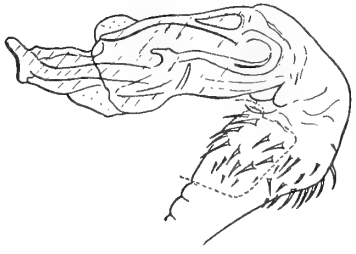

FIG. 63.—*nexilis*.

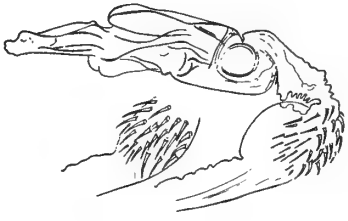

FIG. 64.—*aequabilis*.

FIGS. 61–64, *Lethyna* spp., aedeagi.

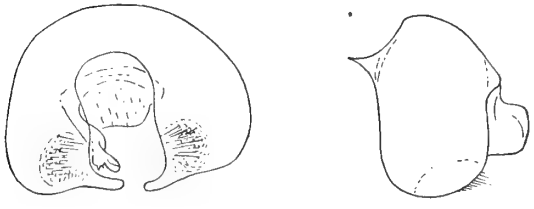

FIG. 65.—*Lethyna aequabilis*, tergum 9, posterior and lateral aspects.

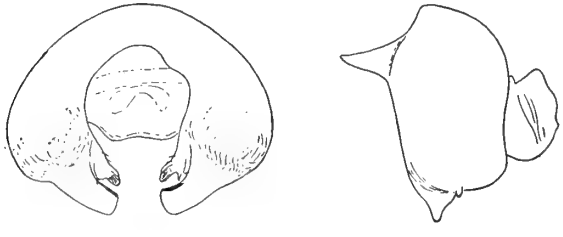

FIG. 66.—*Lethyna nexilis*, tergum 9, posterior and lateral aspects.

pale yellow, dorso-centrals just behind suture; halteres yellow; squamae pale yellow, upper wide, lower narrow; scutellum brown, corners grey-dusted, length about half width, 2 bristles, length three times length of scutellum; legs mainly black, femora ochraceous to yellow on distal ends; tibiae: fore and mid blackened, hind black, distal end broadly ochraceous as are tarsi; wing-pattern (Fig. 60) a pale but well-marked rather fine reticulation over whole surface except extreme base; size of spots moderately variable; first bar in marginal cell usually wide, and there may be an additional hyaline spot in the cell; an extra spot may be present above end of vein 3 and that at end of first posterior moderate to rather small so that a fairly well-defined apical fork may be formed; stigma with or without a hyaline spot of moderate to large size; a row of hyaline spots below sixth vein, usually 4 in male, 5 in female, or sometimes only 3, the middle one elongate; lower angle of anal cell a defined, broad point; veins 3 and 4 distinctly divergent as a rule, sometimes less so.

Abdomen black, densely grey-dusted on sides and median stripes, brown tergal spots rather ill-defined, forming a pair of indefinite but sometimes stronger stripes, or almost absent; pubescence pale yellow, dark on tergal spots, black apical bristles on tergum 5 in male, on 5 and 6 in female; oviscape 1·5 mm., 0·37 wing-length, 1·5 pre-abdomen, narrow, flat in specimens, shining blackish ferruginous, pubescence and venter black.

Male: sternite 5, indent wide, angular, moderate, membrane with very close-set setulae except innermost part bare; tergum 9 (Fig. 65) rather globose, oval laterally cerci not visible below, no flange, posteriorly wider than high, sides swollen below, on each side above cerci a shallow concavity beset with long hairs that may be observed on the pinned specimen; cerci short, rather thin, blunt, inturned at about right angle; major prensiseta large, oval, opposed to cercus, minor small, pointed. Aedeagus (Fig. 64) elongate, vesica reduced, moderate, rather spherical pre-aedeagal swelling with patch of strong setulae above and on right (below in smaller Fig.) the two together encircling about three-fourths of the swelling.

[**Lethyna evanida** (Bezzi) comb. n.]

Ensina evanida Bezzi, 1924, *Bull. ent. Res.*, **15**: 136. Munro, 1935, *Ann. Mus. nat. Hung.*, **29**: 152, Fig. 19.

Only the female type from Abyssinia in the Hungarian National Museum is known.

Head rather shorter; length, height, width, 7:8:10, and the parafacials and genae seem wider than usual.

The wing-pattern is reduced to a scattered, very pale infuscation hardly reticulate, the stigma yellow. A more decided pattern might appear if the wing were examined critically. This may be compared with *Scedella longiseta* (Hering).

PAROXYNA Hendel s.s.

Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 146 (type species: *tessellata* Loew).
Shiraki, 1933, *Mem. Sci. Agric., Taihoku Imp. Univ.*, **8**: 404 (*Ent.* No. 2).
Benjamin, 1934, *U.S. Dept. Afric., Tech. Bull.*, **401**: 40–41.
Munro, 1935, *Arb. phys. angew. Ent.*, **2**: 263.
Hering, 1942, *Beitr. z. Fauna Perus*, 1, *Tryp.*, p. 158; 1944, *Siruna Seva*, **5**: 6–7.
Aczel, 1949, *Acta Zool. Lilloana*, **7**: 286.

The foregoing references apply mainly to non-African species and the full implications and relationships must await a fuller study of world species and of related genera. A general consideration of Paroxyna species in the wider sense has already been given.

African species included here in the restricted sense have 2 long basal and 2 short apical scutellars, the labella shorter and mostly not projecting beyond the epistome, the wing-pattern reticulate but variable.

In the tables (couplet 28) four groups are indicated based on a combination of the presence or absence of a frontal stripe and the appearance of the wing-pattern. A careful estimation of these two characters will usually serve to locate a specimen, but both are variable and it is often difficult to decide one way or the other. In the text the species are arranged in four series that allow for variation and overlapping of characters and may give a reasonable idea of the relationships; this grouping is supported to some extent by characters of the male terminalia.

The groups are: *fenestrata*, *péringueyi*, *anomalina*, and *ignobilis*. The *fenestrata* series is remarkable on account of the peculiar anterior prongs on the strap-like sternite 6; *siphonina* has been placed with *péringueyi* series chiefly on the wing-pattern, but appears rather to be an isolated form. Some species of which sufficient material has not been available, or of which specimens have not been seen, are placed somewhat doubtfully.

FENESTRATA GROUP

A remarkable group characterised by the elongate, pointed flanges on tergum 9 in the male, sternite 5 almost divided into 2 leaf-like pieces and the strap-like 6 with a pair of anterior curved prongs not yet seen in any other Trypetid examined. The species are evidently closely allied and to some extent differentiation is rather weak. One, *fenestrata* (Mt. Elgon), is distinct and may be separated on the wing-pattern and the patch of hairs on the inner side of the flanges (or projections) of tergum 9. The others (not including *petulans*) are not readily separated on the male terminalia, and the oviscape is the same relative length in all. The thorax is blackish with brown or grey dust, but in

shiraensis (Kilimanjaro) it is definitely blacker, almost dull black, and wider; *argentata* and *dispertita* are extreme forms of one species, the wing-pattern varying from a very fine, rather diffuse reticulation of small hyaline spots to rather larger spots; in *shiraensis* the pattern is more like the coarser pattern of *argentata* and is still somewhat diffuse; in *spinata* (South Africa, Natal) the pattern is more clearly reticulate, almost approaching that of *granulata*, and the antennae are yellow (or barely blackened), black in others.

The strap-like sternite 6 has the prongs wide apart in the specimen of *argentata*, less so in *dispertita* and *shiraensis*, less so in the *spinata* preparation.

Another species, *petulans* (Mt. Elgon), may belong here but only females have been available; it has a shorter oviscape.

Paroxyna fenestrata sp. n.

Readily distinguished by the wing-pattern and tergum 9 in male.

KENYA: Mt. Elgon, Alpine Zone, 12,000–13,000 ft., ii.1935. Holotype ♂, allotype ♀; paratypes 4 ♂ (♀ on flower of *Helichrysum armatum*); 1 ♂, 10,500–12,500 ft., on flower of *Helichrysum formossissimum*; 1 ♂, on flower of *Helichrysum brownei*, var. *pleiocephala* (*F. W. Edwards*).

Length, ♂ 2·8 mm., ♀ 3·8 mm.; wing, ♂ 3·5 mm., ♀ 3·3 mm.

Head: length, height, width, 6:7:10; more or less ferruginous, behind black to eye-margin, but postorbits may have slight ferruginous to yellowish tinge, postorbital bristles 1 or 2 yellowish to black, and strong row black setae; frons ferruginous, rather strong, median, silvery stripe, sides broadly and strongly silvery, blackish vertical plates and black ocellar dot silvery; 2 lower orbitals, the hind upper brown, ocellars strong; as wide as long, in ♂ at antennae 0·75, in ♀ 0·85 width at vertex, rather less than half width of head; antennae blackish ferruginous to almost black, 0·8 face, third joint width half length, arista micropubescent; face: epistome projecting 0·5, and parafacials about 0·25 width antennae, gena 0·2 height of eye, bristle pale yellow; labella, haustellum and mouth-opening about equal length.

Thorax dull black; on dorsum blue-grey dust on sides and in front, a broad brown median stripe that may divide anteriorly as far as anterior supra-alars, pubescence brown, shining; pleura with light grey dust, yellow bristle hairs on propleura and on sterna; dorso-centrals a little behind suture, pteropleural white; legs more or less ferruginous, femora black except at ends, fore tibiae mainly blackish, mid broadly black in middle, hind black on proximal three-fourths, in female tibiae not or barely blackened; halteres yellow; squamae whitish, upper wide, lower narrow; scutellum, length half width, flat, apical bristles 0·5 basals; wing (Fig. 67) subreticulate, pale, stigma dark, slightly at base, large hyaline spots in marginal and submarginal cells, the outer may be divided on one wing or the other, is so in the female; the 2 large spots below

them in submarginal may form 1 large spot; hyaline spots otherwise tend to be smaller, fewer and more diffuse, or even smaller and tend to disappear.

Abdomen black, slight grey dust, tergal spots forming brown stripes in male; in female abdomen almost quite brown with weak median streak, pubescence whitish to yellowish; oviscape 0·2 wing-length, 0·8 pre-abdomen, flat in specimen shining black and black pubescence, mid-segment black, aculeus ferruginous.

Male: sternites 3 and 4 very wide, more than four times wide as long, 5 with deep indent and leaf-like sides, 6 with a pair of curved anterior prongs between them 2 setal patches; tergum 9 (Fig. 76) sides produced below into broad points with sharply pointed anal region between, each point laterally as a broad, triangular, postero-ventral projection; inner surface of each point somewhat concave and bears a patch of hairs; the cerci (in posterior view underneath) are narrow, rather flattened and turned directly inwards; major prensiseta about as large as cercus and opposed to it, the minor small with a rather large sensory hair; aedeagus (Fig. 72) much like *spinata*, tube nearly to apex of vesica and a complex ?-shaped coiled rod.

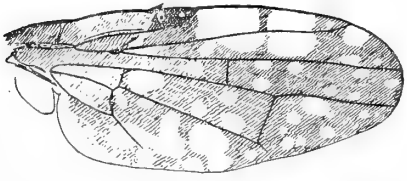

FIG. 67.—*fenestrata*.

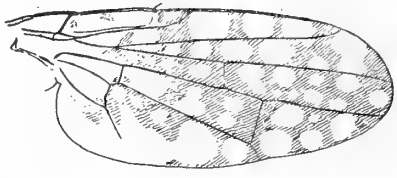

FIG. 68.—*spinata*.

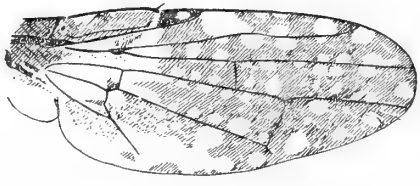

FIG. 69.—*shiraensis*.

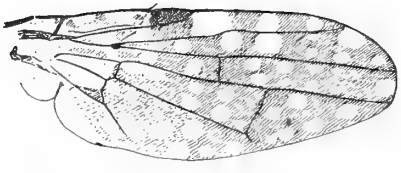

FIG. 70.—*argentata*.

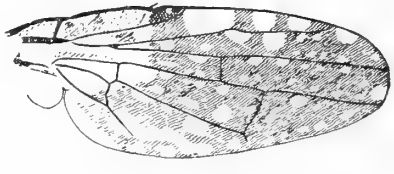

FIG. 71.—*argentata*, var.

Paroxyna spp., *fenestrata* group, wings.

[Paroxyna spinata sp. n.**]**

Very like *ignobilis* but strongly differentiated on the male terminalia.

NATAL: Kloof, x.1934, holotype ♂, allotype ♀, paratypes 1 ♂, 1 ♀, larvae in flowers of *Athrixia phylicoides*; 1 ♂, Durban (Cowie's Hill), 27.ix.1936; 1 ♂, Moseley (near Sarnia), 18.x.1936, 1 ♂; Drakensberg, Loteni River, vii.1941, 1 ♀ (*W. E. Marriott*). UGANDA: Imatong Mts., 10,000 ft., ii.1936, 1 ♂ (*D. R. Buxton*). Types in South African National Collection of Insects, Pretoria.

Length, ♂ 2·8 mm., ♀ 3·6 mm.; wing, ♂ 2·9 mm., ♀ 3·3 mm.

Head: length, height, width, 7:8:10; yellow, posteriorly black, postorbits yellow, more or less blackened, broadly yellow behind vertex, 1 or 2 yellow postorbital bristles in row of black setae; eye broadly oval, distinctly short pubescent; frons yellow, broadly silvery on sides and a moderate median stripe; bristles black, 2 lower orbitals, as long as wide at vertex, at antennae 0·7 length, 0·5 width of head; lunule short, yellow; antennae short, 0·8 face, yellow, third joint, width 0·6 length, arista black, micropubescent; face: parafacials 0·3, epistome projecting 0·6 width of third antennal joint; labella as long as mouth-opening, palpi 0·6 labella, yellow.

Thorax black, grey dust, humeri slightly yellow behind, dorsum: 3 strong brown stripes, the median slightly weaker, pubescence yellow, bristles black, pteropleural white, dorso-centrals about half-way between suture and anterior supra-alars; scutellum, width about twice length, brownish, grey centrally and on corners, 4 bristles, apicals 0·3 basals; legs yellow, femora black on about proximal three-fourths; wing (Fig. 68) clear hyaline, pale reticulation, 3 hyaline spots at base of first posterior cell, the inner one next to upper cross-vein may be absent, stigma with moderate to large median spot; in one female black, and in one other female a spot at top of submarginal cell.

Abdomen black, grey dust, brown tergal spots form moderate to rather narrow stripes, pubescence pale yellow; oviscape about 0·3 wing-length, black, shining, black pubescence, apical bristles black.

Male: sternites wide, 3 and 4 nearly twice as wide as long, 5 with deep indent the two sides leaf-like, 6 with a pari of anterior prongs. Tergum 9 (Fig. 77) very like *shiraensis*, wider than high, sides produced downwards as rather sharp points seen posteriorly, laterally large and broadly pointed hiding the cerci and causing the lower margin of tergum to be strongly emarginate; aedeagus (Fig. 73), vesica large with tube to apex and a complex ?-shaped piece almost to end, pre-aedeagal setulae few.

British Museum ♂ (Imatong Mts.); length 3·5 mm., wing 4·0 mm., wing-pattern rather darker and stigma black. Abdomen greasy from glue used to fasten specimen to point, apex rather damaged; terminalia drawn in and obscured, but the spine-like processes (flanges) appear to be present as in South African specimens.

[Paroxyna shiraensis Munro]

Munro, 1951, *Ann. Mag. nat. Hist.*, Ser. 12, **4**: 712. Salt, 1954, *J. Ecology*, **42**: 419.

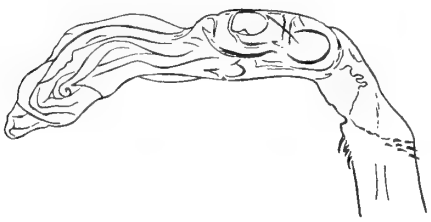

FIG. 72.—*fenestrata*.

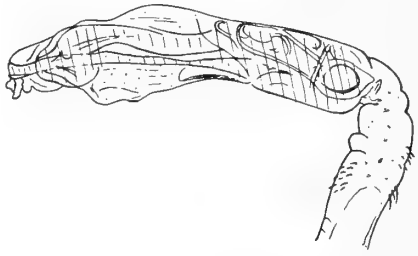

FIG. 73.—*spinata*.

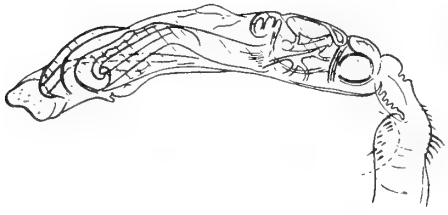

FIG. 74.—*shiraensis*.

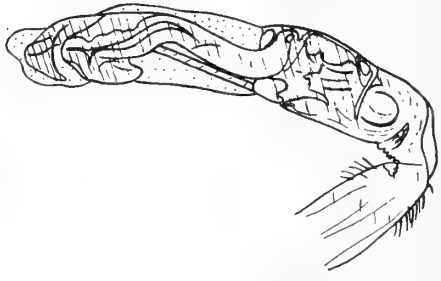

FIG. 75.—*argentata*.

Paroxyna spp., *fenestrata* group, aedeagi.

Paroxyna argentata sp. n.

Very like *shiraensis*, but may be distinguished on the dorsum of thorax. Two forms are recognised here, based on extremes of the wing-pattern:

P. argentata f., *argentata* f. typ.

UGANDA: Kigezi district, Mt. Muhavura, 10,000–12,000 ft., holotype ♂, allotype ♀, paratypes 7♂, 4 ♀.

P. argentata f., *dispertita* f. nov.

KENYA: Mt. Elgon, 10,500–12,500 ft., ii.1935, holotype ♂, allotype ♀, paratypes 2 ♂, on flowers of *Helichrysum newii*.

The remaining paratypes follow as indicated:

KENYA: *argentata* 1 ♀, Mt. Elgon, 10,500–12,500 ft., ii.1935, on flowers of *Helichrysum newii*; *argentata* 1 ♀, *dispertita*, 1 ♂, 5 ♀, on flowers of *H. brownei* var. *pleiocephala*; *dispertita*, 2 ♂, 1 ♀, on flowers of *H. formossissimum*; *argentata* 2 ♀, *dispertita* 1 ♀, Alpine Zone, 12,000–13,000 ft.; Aberdare Range, Nyeri Track, 10,500 ft., x.1934, *argentata* 1 ♂ (all *F. W. Edwards*).

UGANDA: Ruwenzori, Nyamgasani Valley, 12,000–13,000 ft., 9–15.i.1935, *dispertita*, 1 ♂, 1 ♀ (*D. R. Buxton*).

Mt. Muhavura has been chosen as the typical locality as all specimens from there were of the one form; others were all more or less mixed. The extremes of the wing-pattern are shown in the types, but the variation from the one to the other is so gradual that no sharp line can be drawn and some specimens have been labelled "intermediates".

P. argentata.

Length, ♂ 3·3–4·0 mm., ♀ 4·2–4·4 mm.; wing, ♂ 3·7–4·4 mm., ♀ 3·9–4·1 mm.

Head: length, height, width, 7:8:10; black behind, spots behind vertex, postorbits broadly and a widened area below yellow to blackish or black, 1 or 2 postorbital bristles pale or blackened, with a row of strong black setae, beard pale; frons tawny, black ocellar dot, vertical plates lightly, a median stripe moderately to strongly, and sides of frons strongly and broadly silvery; a little

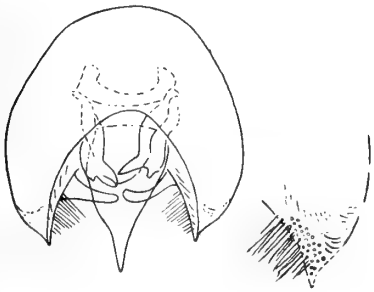

FIG. 76.—*fenestrata.*

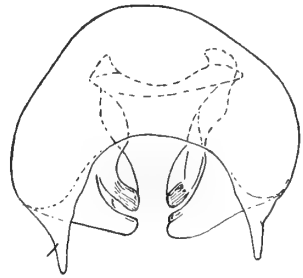

FIG. 77.—*spinata.*

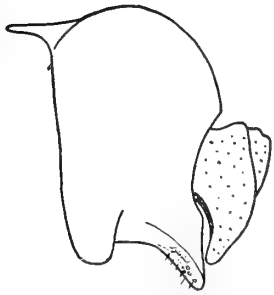

FIG. 78.—*shiraensis.*

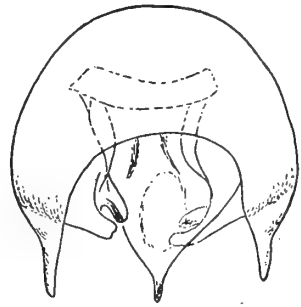

FIG. 79.—*argentata.*

Paroxyna spp., *fenestrata* group, terga 9.

wider than long, somewhat narrowed to antennae, 0·5 width of head, 2 lower orbitals, ocellars strong; lunule short, dark ferruginous; antennae dark yellow, blackish to black, 0·8 face, third joint length twice width, arista black, micropubescent; face blackish ferruginous, parafacials 0·2 antennae, silvery, epistome projecting about 0·75 antennae, gena about 0·25 height of eye, bristle pale yellow; proboscis elongate, labella, haustellum and mouth-opening subequal in length, palpi rather narrow, 0·7 labella, ferruginous, blackened at end.

Thorax: dorsum (metanotum) as wide as long, at most barely wider; dust blue-grey (markedly blackish in *shiraensis*) or more strongly blue, or with a more marked brownish tinge when the broad median brown stripe is less divided into three; pubescence yellowish; pteropleural white, dorso-centrals 0·25 distance to anterior supra-alars behind suture; humeri, pleura and post-scutellum black with light dust, pleura with sparse, fine, pale pubescence and long, pale bristle-hairs below wing-base, as also on sterna; scutellum flat, black, brown dust, apical bristles 0·5 basals; halteres yellow; squamae whitish, upper wide, lower narrow; legs ferruginous, coxae and femora black, hind tibiae barely to strongly blackened. Wing (Figs. 70, 71), a faint, rather suffused reticulation varying in intensity and in number and size of hyaline spots, the variation gradual between extremes; marginal cell has always a large basal hyaline spot and 2 outer, sometimes only 1 large outer, or 2 half-formed spots, or 3 or 4, the fourth in the extreme tip, stigma black or with a small to large subhyaline spot.

Abdomen black, grey-dusted, in male 2 brown stripes formed by moderate tergal spots, in female brown-dusted except on tergite 2 and a narrow median stripe grey. Oviscape 1·3 mm., 0·3 wing-length, 1·1 pre-abdomen, shining black, pubescence black, flat in specimens.

Male: sternites, 5 almost completely divided into 2 leaf-like lobes, prongs on 6 strong (Fig. 81). Tergum 9 (Fig. 79) like *shiraensis* (cf. Fig. 78), the sides produced into broad points (flanges); in a male from Mt. Muhavura the flange has a slight nick in lateral view and sternite 6 and its prongs wide; a male (*dispertita*) from Mt. Elgon has the flange even and sternite 6 narrower. Aedeagus (Fig. 75) appears rather more heavily sclerotised than in *shiraensis*, and the detail that may be seen in each figure is rather different; pre-aedeagal setulae few, but rather stronger.

argentata form. typ.

Wing (Fig. 70): in first posterior cell 8 fair-sized spots in 2 rows and an apical spot, each about 0·3 width of cell, in discal 2 rows of 2 or 3 spots like those in first posterior and a large basal spot, but the spots generally rather ill-defined, in second posterior 6 or 7 moderate spots.

dispertita form. n.

Wing (Fig. 71): pattern paler, sometimes very pale, hyaline spots small and numerous: in first posterior cell 2 rows of 6 or 7 each, small and close to veins above and below, and a small apical spot with occasionally additional spots between the rows; in discal two similar rows of 5 or 6 each and larger basal spot; in second posterior 12–14 small spots.

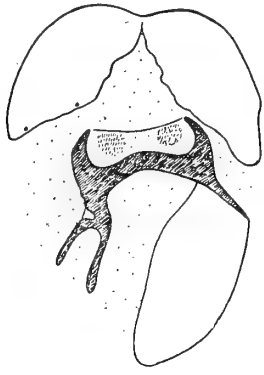

FIG. 80.—*shiraensis*.

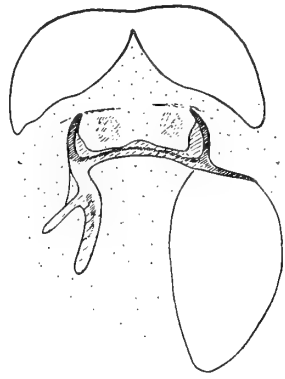

FIG. 81.—*argentata*.

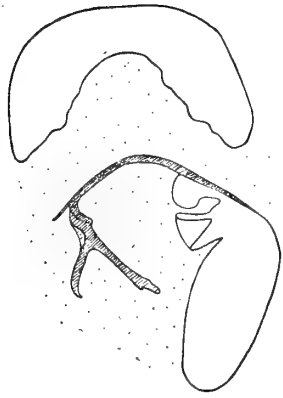

FIG. 82.—*ignobilis*.

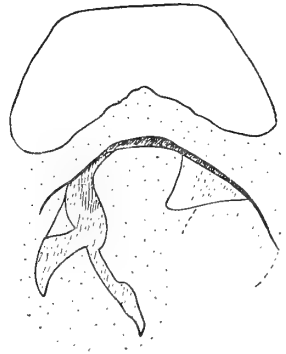

FIG. 83.—*eflorata*.

Paroxyna spp., sternites 5 and 6. The upper figures show the peculiar anterior prongs on sternite 6 and the setal patches. Differences between *ignobilis* and *eflorata* may be noted.

PERINGUEYI GROUP

Frons without median stripe. Wing-pattern evenly reticulate and there is no speckled appearance, even when reduced. The main reduction has been to a more or less complete, irregular bar from end of anal, over discal to end of marginal cell, or there may be a complete but diffuse reticulation. It is probable that *siphonina* is an isolated form on account of the ninth tergum and aedeagus; it might be placed nearer *Scedella* (*caffra* series), but the apical scutellars are short. *P. petulans*, of which no males are available, has been placed doubtfully with the *anomalina* series; on the wing-pattern it comes nearer to some of the *péringueyi* group, but the frontal stripe is absent.

Paroxyna péringueyi (Bezzi) comb. n.

Euribia péringueyi Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 555, Plate XV, Fig. 109; *Bull. ent. Res.*, **15**: 138.

A small species widespread in South Africa. The type is a male, not female, from Capetown in the South African Museum collection, and large series have been collected and reared. It was therefore of interest to find many specimens in the British Museum material, and these are quite like those from South Africa.

Péringueyi is much like *ignobilis* and may be confused with it in spite of an obvious difference in the appearance of the wing-pattern. There is as great, if not greater, range in coloration especially the dorsum of thorax and wing-pattern. Curiously a rather characteristic feature is the appearance of 2 or 3 rather indistinct hyaline spots at base of first posterior cell before lower cross-vein.

Length, ♂ 2·5 mm., ♀ 3·2 mm.; wing, ♂ 2·4 mm., ♀ 3·3 mm.

Frons 0·5 width of head, 2 lower orbitals and no frontal stripe; arista micropubescent; labella, haustellum and mouth-opening of about equal length.

Thorax: dorsum plain grey-dusted and no stripes, or 3 varying from weak to strong, or 1 broad median stripe, grey on sides. The single broad stripe, as in the type, seems the most usual and at times the only form as in the Kenya specimens and those from Mposa, but the full range may occur in any one locality. Halteres yellow (not blackish, Bezzi, nor black, Hering); femora black; apical scutellar bristles 0·3–0·4 basals. Wing (Fig. 84) generally appearing pale and evanescent towards hind margin, but full pattern shows obliquely or when mounted, sometimes darker and usually darker along costa, variable in detail, a single spot below end of vein 2 becoming more or less divided into two; at base of first posterior cell, before lower cross-vein, a rather characteristic group of 2–3 small spots that may be somewhat confluent; stigma black or with variable subhyaline spots, in Kenya specimens mostly with large spot.

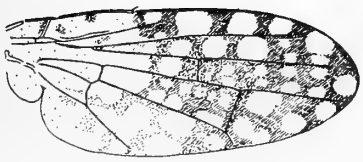

FIG. 84.—*péringueyi.*

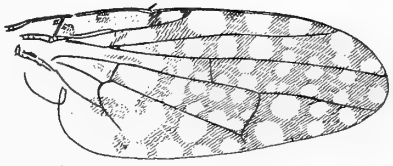

FIG. 85.—*siphonina.*

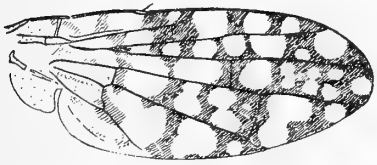

FIG. 86.—*granulata*, dark f.

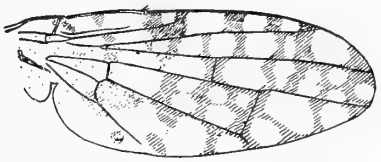

FIG. 87.—*granulata*, light f.

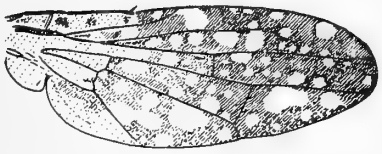

FIG. 88.—*salina.*

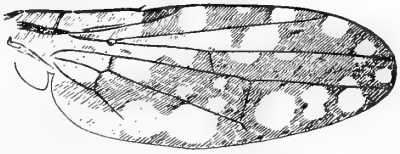

FIG. 89.—*saltoria.*

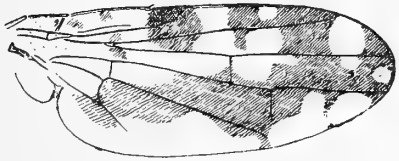

FIG. 90.—*sigillata*, ♂.

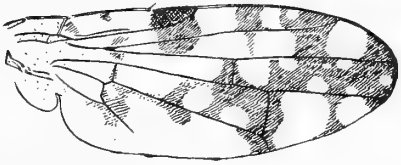

FIG. 91.—*sigillata*, ♀.

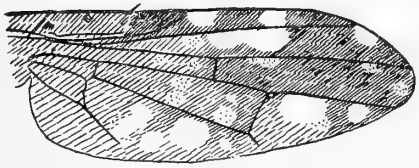

FIG. 92.—*edwardsi.*

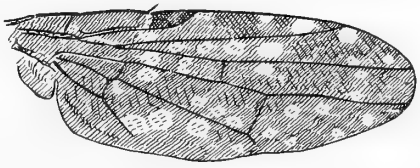

FIG. 93.—*brunalata.*

Paroxyna spp., *péringueyi* group, wings.

Abdomen: female, black bristles on hind margins of tergites 5 and 6; oviscape very short, 0·6 mm., 0·13–0·18 wing-length, about 0·25 pre-abdomen.

Male: tergum 9 rounded posteriorly, flange very short and inconspicuous, cerci short, broadly rounded, prensisetae, major large, prominent, opposed to cercus, minor reduced; aedeagus (Fig. 97) vesica large, a sinuate, hooked rod

extends to apex ending in a cup-like structure inside which the elongate tube ends, the walls of the cup are finely striate, but the striae, which appear double, are usually difficult to see; no pre-aedeagal setulae. Indent of sternite 5, 0·4 length.

Biology and records

The species has been taken throughout South Africa, from Namaqualand on the west to Zululand on the east and from Mossel Bay to the Transvaal. Its preferred host-plants seem to be species of Cineraria. Rearing records are:

Mossel Bay, x.1935, W. E. Marriott, from *Cineraria geifolia*; Klippiespan (Boshof) near Kimberley, ix.1948, J. H. Power, from *C. aspera*; Izingolweni, Natal, x.1941, W. E. Marriott, from *C. natalensis*; Mposa, Zululand, x.1951, H. K. Munro, from *C. deltoidea*; Whitehills, Cape, x.1935, W. E. Marriott, from *Senecio laxus*; Kimberley, ix.1948, J. H. Power, from *S. apiifolius*.

The British Museum material is as follows, but although specimens are recorded as taken *on* various plants, none appear to have been reared. All taken by Dr. F. W. Edwards except a male from the Imatong Mts. taken by D. R. Buxton.

UGANDA: Kigezi district, Mt. Sabinio, 8000 ft., xi.1934, 1 ♂; Mt. Muhavura, 10,000–12,000 ft., 1 ♂; Imatong Mts., 10,000 ft., ii.1936, 1 ♂. KENYA: Mt. Elgon, ii.1935, 23 ♂, 35 ♀, consisting of odd specimens taken at various localities between 10,500 and 13,000 ft. resting on sundry plants: *Selangia* sp., *Artemisia afra*, *Euryops elongensis*, *Helichrysum engleri*, *H. armatum*, *H. formossissimum*, *Conyza ruwenzoriensis*, *Cineraria kilimandscharica*, *Senecio rhammatophyllus* and *Protea* sp.

Paroxyna siphonina (Bezzi)

Ensina siphonina Bezzi, 1918, *Bull. ent. Res.*, **9**: 33; 1920, *id.* **10**: 263; 1924, *id.* **15**: 136.
Paroxyna siphonina (Bezzi) Munro, *Dept. Agric. S. Afr. ent. Mem.*, No. **9**: 42.

KENYA: Embu, in British Museum. Holotype 1 ♀.

A rather large species; length, ♂ 4·2 mm., ♀ 4·4 mm.; wing, ♂ 4·2 mm., ♀ 4·4 mm.; oviscape 1 mm.

Head: frons, median stripe variable, strong or almost absent, but in any case the specimen must be good; arista micropubescent; epistome projecting slightly beyond antennae; labella elongate, projecting before and behind as is evident in the type from a sketch made by Miss Aubertin—Bezzi's statement "about as long as the entire body" is misleading.

Thorax: legs yellow, hind femora may be more or less blackened in some males, as much as two-thirds; wing-pattern (Fig. 85) a rather pale, even reticulation, blacker in fresh specimens; it is very variable, especially at apex, below tip of vein 2 may be 2 separate spots, partly united or 1, at times a spot above tip of vein 3.

Abdomen: tergal spots form a pair of brown stripes; in female black bristles at end of tergum 6 only; oviscape short, 1 mm., 0·25 wing-length, in ether-fixed specimens flattened, wide, 0·8 mm., at base with sharp lateral margins.

Male: sternites, a deep indent almost divides 5 into two, 4 with a slight indent, 3 occasionally. Terminalia in general heavily sclerotised, fultella and ring massive; tergum 9 (Fig. 94), sides swollen and broadly rounded (to be observed in pinned specimens), cerci reduced to short, blunt points directed inwards and somewhat upwards, points black and heavily sclerotised with 2 diverging grooves on the inner side; prensisetae: twisted rod firmly fused to inner side of cercus, the major forms half of a broad projection which is the modified end of the rod; this structure is about as large as the cercus, the two appearing to form a pincers with the much reduced minor seta between. Aedeagus (Fig. 98); vesica reduced, a tube extending beyond its apex; pre-aedeagal swelling large with a long row of setulae on either side; there may also be some setulae on the lower side towards the middle of the phallosome.

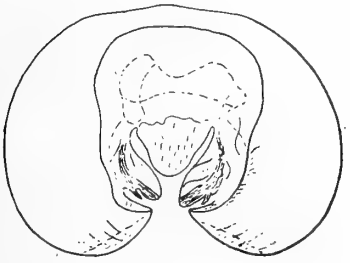

FIG. 94.—*siphonina.*

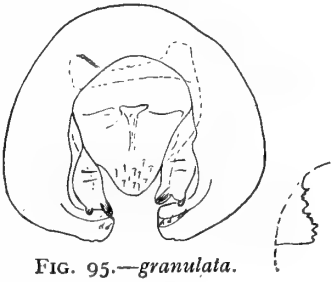

FIG. 95.—*granulata.*

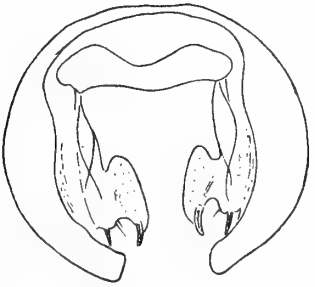

FIG. 96.—*saltoria.*

Paroxyna spp., *péringueyi* group, terga 9.

Material

ERITREA: Asmara, 17.xii.1948, 1 ♀ (*G. De Lotto*). UGANDA: Ruwenzori, Mt. Karangora, 9900 ft., 1.ii.1935, 1 ♂, 1 ♀ (*F. W. Edwards*). KENYA: Athi River, viii.1937, 4 ♂, 1 ♀; Nairobi, viii–ix.1937, 2 ♀; Chyulu, iv.1938, 1 ♂, 3 ♀ (*V. G. L. van Someren*) (Coryndon Museum), from flowers of Compositae, spp. indet. SOUTHERN RHODESIA: Mt. Chirinda, 3800 ft., 12.vi.1911, 2 ♂ (*C. F. M. Swynnerton*); Mazoe, 28.xii.1932, 2 ♂, 1 ♀ (*W. K. Ford*), in flowers of *Bidens pilosa*. SOUTH AFRICA: Transvaal, Entabeni, Vera View, v.1953 (*H. K. Munro*), in flowers of *Bidens insecta* (S.A. Nat. Coll. Ins.). *Puparium* dull black to pale brownish, firmly glued among remains of achenes; 2–4 in a flower.

[Paroxyna granulata sp. n.]

Ensina ignobilis var. *plebeja* Munro (*nec* Loew, *nec* Bezzi), *Dept. Agric. S. Afr. ent. Mem.*, No. **5**: 29.

A variable, widespread species in South Africa. It may be mistaken for *ignobilis* if the difference in the appearance of the wing-pattern is not fully appreciated; on the other hand, the pattern is very like that of *péringueyi*. It differs from both in the male terminalia.

Holotype ♂, allotype ♀, 64 ♂, 60 ♀ paratypes as listed under the host-plants.

Length, ♂ 2·8 mm., ♀ 3·75 mm.; wing, ♂ 2·9 mm., ♀ 3·25 mm.

Head: length, height, width, 7:8:10; posteriorly black, broadly yellow on upper orbits and 2 large spots behind vertex; frons yellow, as long as wide, 0·5 width of head at vertex, 0·35 at antennae, yellow, no median stripe; lunule short, yellow; antennae brownish yellow, 0·85 face, arista brown, micropubescent; face: parafacials narrow, 0·2–0·25 antennae, epistome projecting 0·8 antennae and proboscis about 2 times when drawn up, labella and haustellum about equal length, longer than mouth-opening, palpi 0·8 labella.

Thorax: dust golden yellow, especially from behind, tending to golden-brown posteriorly and on to scutellum, more strongly golden in coast specimens, grey on sides and in front, males generally more brown towards suture, stripes not developed; pubescence pale yellow; bristles normal, dorso-centrals just behind suture; legs ochraceous, femora black except broadly on outer ends; squamae white, upper wide, lower narrow; halteres brown; scutellum flat, apical bristles 0·3 basals; wing-pattern (Fig. 87), a pale, light reticulation, may be more broken up or tend to be more complete and darker, distinctly darker and heavier (Fig. 86) in coast specimens (Margate and East London); a large hyaline spot at base of first posterior cell before lower cross-vein and 1 below end of vein 2, usually a moderate hyaline spot in stigma.

Abdomen rather shining-black or rather strongly ferruginous, grey dust slight, moderate submedian brown stripes, sometimes not or hardly apparent, or only in certain lights on tergites 3, 4 and 5; pubescence pale; oviscape short,

0·75 mm., 0·23 wing-length, 0·75 pre-abdomen, black with fine, black pubescence.

Male: tergum 9 (Fig. 95) rounded in posterior aspect, flange short, triangular, cerci moderate, broad, strongly sclerotised on inner side; prensisetae: major relatively small but more or less opposed to cercus. Aedeagus (Fig. 99); vesica short, tube short and straight, sometimes sclerotised and oblique on distal half, with a characteristic, large, sac-like granular mass; a few inconspicuous pre-aedeagal setulae, and 2 or 3 minute spines at middle of phalosome. Sternite 5 rounded in outline, indent 0·5 length.

Material

This is arranged under host-plants; it is all in the South African National Collection of Insects, Pretoria, but paratypes from various series will be deposited in the British Museum.

Dimorphotheca

Holotype ♂, allotype ♀, 3 ♂, 6 ♀ paratypes, Pretoria, xi.1925 (*H. K. Munro*), in achenes of *D. spectabilis*, sometimes in flower-head between achenes.

The following specimens are all paratypes:

5 ♂, 4 ♀, Matjesfontein, Cape, x.1935 (*W. E. Marriott*), in achenes and flower-heads of *D. cuneata*; 3 ♂, 2 ♀, East London, vii.1925 (*H. K. Munro*), in flowers of *D. fruticosa*; 8 ♂, 7 ♀, Margate, Natal, xi.1934 (*W. E. Marriott*), in flowers of *D. fruticosa*.

Osteospermum muricatum (in achenes)

4 ♂, 4 ♀, Vryburg (Ophir), xi.1947 (*W. H. Ghent*); 11 ♂, 10 ♀, Colenso, Natal (*W. E. Marriott*); 5 ♂, 2 ♀, Pretoria, x.1925 (*H. K. Munro*); 1 ♂, 3 ♀, Witkrans, N. Tvl., i.1954 (*H. K. Munro*).

Osteospermum junceum

3 ♀, Tulbagh (Cape), Vogel Vlei Mts., x.1948 (*C. G. C. Dickson*).

Tripteris flexuosa

2 ♂, 2 ♀, Pretoria, x.1925 (*H. K. Munro*), in flowers.

Calendula (cultivated)

1 ♂, 2 ♀, Marlborough, S. Rhodesia, xii.1951 (*G. F. Cockbill*), in flowers (Acc. No. 6543, Rhodesia Entomologist, Salisbury).

In nest of Crabro westermanni

1 ♀, Pretoria, 8.x.1935 (*H. K. Munro*) (captured and stored by wasp).

Host-plant not known

Cape Province: Matjesfontein, 5.xii.1947, 2 ♂, 1 ♀ (*H. K. Munro*); East London, iii, iv, vii.1925, 8 ♂, 2 ♀ (*H. K. Munro*); Middelburg, 12.ii.1925, 1 ♀ (*H. K. Munro*); Redhouse, 11.ix.1950, 2 ♂, 1 ♀; Robertson, 12.x.1950, 1 ♀; Uitenhage (Groendal), 15.x.1950, 1 ♀ (*C. G. C. Dickson*). Transvaal: Pretoria, x, xii.1925, 3 ♂, 2 ♀; Maraheki, ix.1948, 7 ♂, 4 ♀ (*H. K. Munro*).

[Paroxyna salina Munro]

Munro, 1951, *Ann. Mag. nat. Hist.*, Ser. 12, **4**: 710. Salt, 1954, *J. Ecology*, **42**: 419.

Recorded from Kilimanjaro. Wing (Fig. 88).

Male: tergum 9 normal, rounded posteriorly, flange short; aedeagus (Fig. 100), tube into vesica elongate and projecting beyond hook-shaped rod; a trace of pre-aedeagal setulae. Sternite 5 rather large, indent 0·3 length.

[Paroxyna saltoria Munro]

Munro, 1951, *Ann. Mag. nat. Hist.*, Ser. 12, **4**: 711. Salt, 1954, *J. Ecology*, **42**: 419.

The type locality is Shira Plateau, Kilimanjaro, where the species was obtained by G. Salt.

Wing (Fig. 89) infuscated to base, pattern a modified, reduced reticulation with a marked bar from point of anal cell, across discal and first posterior to apex.

Male: tergum 9 (Fig. 96) rounded, flange short, cerci rather blunt, short and narrow; major prensiseta rather small but opposed to cercus on a large ear-like piece, minor reduced; aedeagus (Fig. 101) very like *salina*, the tube is obscure in the preparation while the hook-shaped rod appears as a sigmoid tube vaguely sclerotised at its end; no pre-aedeagal setulae; sternite 5, posterior corners rounded, indent 0·3 length.

[Paroxyna sigillata sp. n.]

NATAL: Port Shepstone, iv.1936, holotype ♂, allotype ♀ (*W. E. Marriott*), in flowers of *Osteospermum grandidentatum* (S. Afr. Nat. Coll. Ins.).

Length, ♂ 2·0 mm., ♀ 2·4 mm.; wing, ♂ ♀ 2·0 mm.

Head and appendages yellow; length, height, width, 7:8:10; posteriorly black, 2 spots behind vertex and broadly on postorbits yellow, bristles 2 pale and 2–3 black setulae; frons about as long as wide at vertex, rather more than 0·5 width of head, bristles weak, 2 lower orbitals, no median stripe; antennae deeper yellow, arista micropubescent; epistome projecting about 0·5 antennae, labella and haustellum a little longer than mouth-opening, projecting when drawn up.

Thorax dust brown between dorso-central line and over scutellum, paler in front and grey on sides, pleura with moderate grey dust, bristles normal, dorso-centrals at suture; legs yellowish, femora black, distal ends broadly yellow; apical scutellars 0·3 basal; wing (Fig. 90 ♂, 91 ♀), a reduced pattern much like *saltoria*, with a bar from end of anal cell, over discal and first posterior to wing-tip, the pattern more broken up in female.

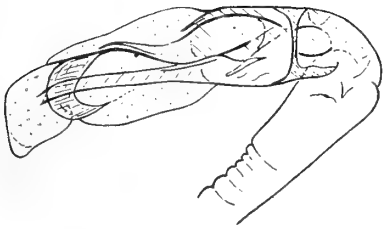

FIG. 97.—*péringueyi.*

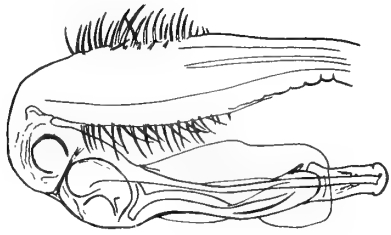

FIG. 98.—*siphonina.*

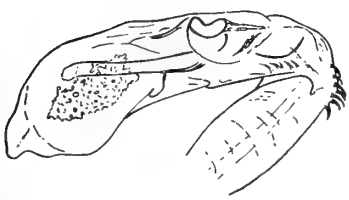

FIG. 99.—*granulata.*

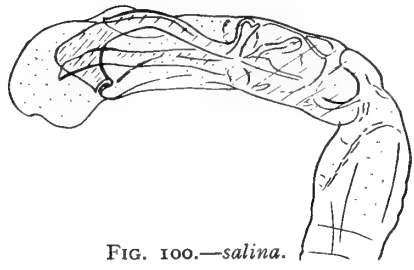

FIG. 100.—*salina.*

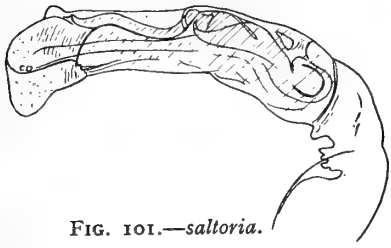

FIG. 101.—*saltoria.*

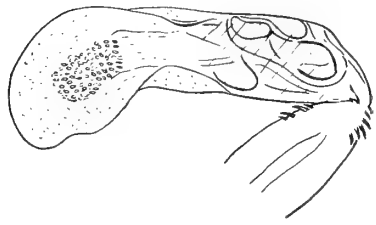

FIG. 102.—*sigillata.*

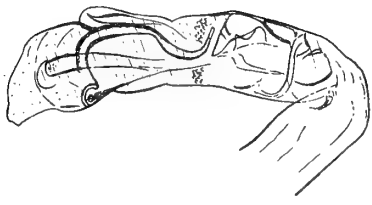

FIG. 103.—*brunalata.*

Paroxyna spp., *péringueyi* group, aedeagi.

Abdomen in male rather brownish with light dust and rather long, pale pubescence, no sign of submedian spots or stripes; in female blackish dust stronger and usual brown stripes; oviscape 0·3 wing-length, 0·6 pre-abdomen, black and black pubescence.

Male: indent sternite 5 0·3 length; tergum 9 normal, a short triangular flange that may be seen on the pinned specimen; aedeagus (Fig. 102) rather like *granulata*, showing a granular plate in vesica, but tube not apparent in preparation.

Paroxyna edwardsi sp. n.

UGANDA: Kigezi district, Mt. Muhavura, 10,000–12,000 ft., xi.1934, holotype ♂, allotype ♀ (*F. W. Edwards*).

Length, ♂ 2·9 mm., ♀ 3·0 mm.; wing, ♂ 3·0 mm., ♀ 3·6 mm.

Head: length, height, width, 6:7:10; eye rounded, length 0·6 height; posteriorly black to eye-margin and vertex, shading to yellow below, post-orbitals 2–3 thick, yellow, with row black setae, beard weak, pale; frons flat, yellow, darker towards vertex, no median stripe in male, but slight obliquely in female, no pubescence, width 1·1 length, 0·5 width of head (0·4 at antennae), 2 lower orbitals, ocellars strong; lunule short, yellow; antennae 0·8 face, dark yellow, blackish in female, third joint width 0·7 length, arista black, micro-pubescent; face yellow, epistome slightly prominent, grooves deep, facialia narrow, gena 0·2 height of eye, bristle brownish; proboscis distorted in male type, in female labella and haustellum of about equal length and slightly shorter than mouth-opening; palpi normal.

Thorax black; dorsum: blue-grey dust on sides, medially a wide, strong, brown stripe barely dividing into three anteriorly, pubescence yellow, shining; pleura and postscutellum black, grey-dusted, former with pale pubescence; bristles normal, black, dorso-centrals at suture, the pale pteropleural and a few pale bristle-hairs below wing-base; halteres yellow; squamae brownish, upper rather less than semicircle, lower narrow; scutellum flat, brown, length 0·6 width, apical bristles 0·4 basals; legs blackish ferruginous, coxae and femora black, tibiae, anterior blackish, middle missing in male, hind blackish, black on proximal half, in female the tibiae are only slightly blackish; wing-pattern (Fig. 92) rather ill-defined and not properly reticulate, stigma black, marginal cell, ♂ with 2 hyaline spots (possibly 3 normally) both narrower than bar between, 3 in female.

Abdomen black, pubescence brown-shining; dust brown, grey on tergum 2 and a very slight median grey stripe, weaker in female; male terminalia blackish ferruginous (not dissected); oviscape shining-black, pubescence black, 0·5 mm., 0·15 wing-length, 0·5 pre-abdomen; middle joint blackish to ferruginous, aculeus ferruginous; venter black, grey dust.

Paroxyna brunalata sp. n.

KENYA: Mt. Elgon, 10,000–12,500 ft., ii.1935, holotype ♂, allotype ♀, 14 ♂, 12 ♀ paratypes, on flowers of *Euryops elgonensis*.

Length, ♂ 3·1 mm., ♀ 3·9 mm.; wing, ♂ 3·3 mm., ♀ 3·5 mm.

Head: length, height, width, 7:7:10; eye rounded oval, posteriorly black, a yellowish or ferruginous tinge below or postgenae mainly ferruginous, a pair of spots behind vertex and postorbits narrowly yellow, postorbitals 2–3 yellow with black setulae; frons flat, orange rufous, no median stripe and sides only narrowly silvery, as long as wide, a little narrowed to antennae, 0·5 width of head, no pubescence, 2 lower orbitals, ocellars strong; lunule short, orange rufous; antennae orange rufous, slight to moderate blackening, black in female type, 0·8 face, third joint short oval, width 0·6 length, arista micropubescent; epistome slightly prominent, parafacials moderate, in male 0·25, in female 0·5 width third antennal joint, gena 0·25 height of eye, bristle pale brown; proboscis, haustellum and mouth-opening about equal; palpi wide, curved, flat.

Thorax black; dorsum: dust uniformly shining-brown, or barely a trace of stripes anteriorly, pubescence pale yellow, bristles normal, dorso-centrals at suture, pteropleural ferruginous; halteres yellow; squamae darkened, upper wide, lower narrow; scutelum, length 0·5 width, apical bristles 0·34 basals; legs hazel, femora black except ends; wing (Fig. 93) width 0·3 length, uniformly blackish brown to extreme base, stigma slightly darker and browner, a few subhyaline spots, usually undefined, if small, just discernible.

Abdomen black, slightly grey-dusted, pubescence black, on tergum 2 whitish; in male tergites 3 and 4, which are narrowly yellowish, have longer, whitish pubescence on hind edges, the apical bristles black; in female all the longer hind marginal pubescence black; oviscape 0·8 mm., 0·24 wing-length, 0·8 pre-abdomen, shining black, pubescence black.

Male: tergum 9 normal, rounded posteriorly, flanges short; cerci short; aedeagus (Fig. 103); vesica with stout, hook-shaped rod and tube projecting just beyond it, no pre-aedeagal setulae; fultella and ring strongly asymmetrical; sternite 5 rather large, indent 0·3 length.

ANOMALINA GROUP

The species placed here and those in the *ignobilis* group so intergrade, or perhaps better, overlap, that no very definite line can be drawn between them. On the wing-pattern there could be two groups, with a more complete reticulate pattern and with a reduced V-pattern. The present grouping is based to a small extent on this, but more with the presence of a frontal stripe.

The *anomalina* group thus has a frontal stripe and a wing-pattern rather too strongly V-shaped (*petulans* is included doubtfully); in addition in the aedeagus, the vesica has a marked apical "hood" and a curious plate at the end of the

(ejaculatory) tube. *P. compta* has a more reduced V-pattern very like *anomalina*, but is placed nearer *ignobilis* on the absent or weak frontal stripe and the aedeagus. Occasional specimens of *ignobilis* may develop a weak frontal stripe. On the pre-aedeagal swelling is a long row of setulae on either side.

[Paroxyna anomalina (Bezzi)]

Spathulina anomalina Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 536, Plate XIV, Fig. 87; 1924, *Bull. ent. Res.*, **15**: 134.
Paroxyna anomalina (Bezzi) Munro, 1934, *Amer. Mus. Nov.*, **739**: 3.
Paroxyna munroi Hering, 1941, *nec* Hering, 1937, and var. *apiceguttata*, Hering, 1941, *Ann. naturhist. Mus. Wien*, **51**: 202 (syn. nov.).
Paroxyna anomalina (Bezzi) form *apiceguttata* Hering, 1944, *Siruna Seva*, **5**: 11 (syn. nov.).
(? *Paroxyna munroi* Hering, 1937, q.v.).

The type locality is Pretoria and the species seems to be common but not numerous in the Transvaal High Veld. The specimens from Abyssinia that I identified as *anomalina* in 1934 and of which I have a male, I am still satisfied are this species; the male terminalia agree with those of South African specimens.

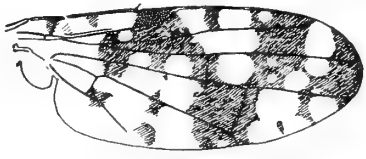

FIG. 104.—*anomalina.*

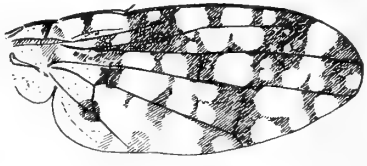

FIG. 105.—*umbritica.*

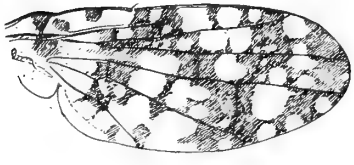

FIG. 106.—*anchorata.*

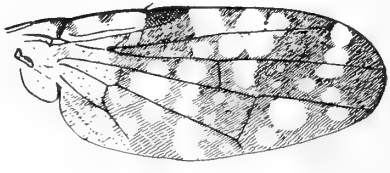

FIG. 107.—*nacta.*

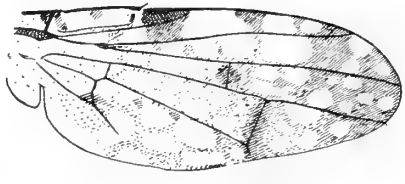

FIG. 108.—*petulans.*

Paroxyna spp., *anomalina* group, wings.

One important point is that *anomalina* has a well-marked median, silvery frontal stripe; it is present in the type but was not noted by Bezzi; further, Hering does not mention it in any of his records as *anomalina*. The stripe is so marked it could not easily be overlooked unless the specimens were greasy. It is thus possible that the *anomalina* of Hering, 1944 (and compare his *munroi*), may be the new species, *compta*, described here; this has a wing-pattern almost identical with *anomalina* but no frontal stripe, or at most very faintly obliquely, also the male genitalia show differences from *anomalina*. The presence of an apical hyaline spot on the wing is no more than a normal variation in various species of *Paroxyna*.

Length, ♂ 3·1 mm., ♀ 3·5 mm.; wing, ♂ ♀ 3·0 mm.; some males as small as 2·1 mm.; wing 2·2 mm.

Head: length, height, width, 7·5:8:10, or the height somewhat less; the Abyssinian specimen at first sight appears to have a longer head, but this is merely because the head has been tilted up in front. If this happens and at the same time the eye is more oblique than usual, there is a greater illusion of length as well as of a more projecting epistome. It may be noted, too, that the lower margin (or border) of the head is, for practical purposes, the length of the mouth-opening or the epistomal axis. Posteriorly the head is black in the middle, mainly yellow below, and broadly yellow behind vertex and along upper orbits, but this is variable and may be less marked. Frons about as long as wide (Bezzi states 1·5 times long as wide), narrowed to antennae and 0·5 width of head; the median stripe is wide but sometimes less conspicuous when the frons is pale yellow; antennae as long as face, the upper corner broadly pointed; epistome projecting about 0·3 and moderate parafacials 0·4 width antennae.

Thorax: 3 moderate stripes on dorsum; wing (Fig. 104) pattern uniformly blackish, but 3 dark areas prominent with little reticulation between and form an irregular, thick V, a hyaline spot at apex may occur; in some very small males the pattern is more compact.

Abdomen: oviscape distinctly short, 0·6 mm., about 0·2 wing-length and 0·5 abdomen.

Male: tergum 9 normal, cerci short, broad, bluntly rounded, not scoop-like; flange (Fig. 109) short, irregular toothed margin; major prensiseta moderate, ear-like on short stalk, minor much smaller; aedeagus (Fig. 114): vesica with broad, bent-over tip ("hood"), tube nearly to apex of vesica, at its end with a large, oval, plate-like structure, less sclerotised and so less marked in some specimens; pre-aedeagal swelling not marked, but a long row of setulae on either side; sternite 5 (Fig. 113 *a*) indent rather more than half length, posterior corners acute angular. The Abyssinian male agrees with those from South Africa, the indent of sternite 5 less deep.

Biology

Odd specimens have been taken at various places between Pretoria and Johannesburg from 1923 to 1953. In Natal, Mr. Marriott has taken it in the Drakensberg (Loteni River, vii.1941; Natal National Park, vii.1946) at Colenso, 15.xi.1939; one from Pinetown, near Durban, Munro.

FIG. 109.—*anomalina.*

FIG. 110.—*umbritica.* Flanges.

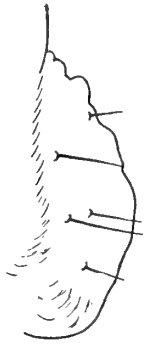

FIG. 111.—*anchorata.*

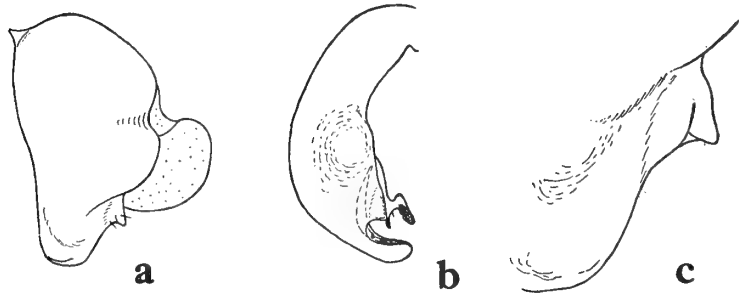

FIG. 112.—*nacta:* (*a*) tergum 9, lateral aspect, (*b*) posterior, (*c*) flange.

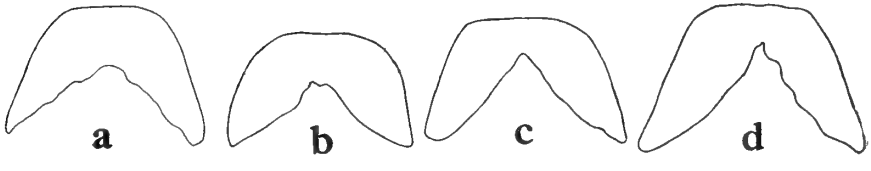

FIG. 113.—Sternite 5: (a) *anomalina*, (b) *nacta*, (c) *umbritica*, (d) *anchorata*.

Paroxyna spp., *anomalina* group.

It has been reared from puparia in flowers of *Lactuca capensis*, a common weed, at Johannesburg, 1 ♀, Blairgowrie, ii.1950; at Heidelburg in the Transvaal, 3 ♂, 1 ♀, ii.1952, and Pretoria (Hatfield), 2 ♀, iii.1953. At Blairgowrie in ii.1950, 7 ♂ and 4 ♀ were taken by sweeping over very unpromising grass-veld, but it was not till two years later, at the same place, that infested flowers were found. Even then, only one fly was reared, many other puparia being parasitised.

[Paroxyna munroi Hering]

Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 262, Taf. V, Fig. 18; 1944, *Siruna Seva*, **5**: 11.

Described on a pair from Abyssinia. Since it is stated "Kopf unten merklich langer als hinten hoch", it may be assumed the head *could* be as long as in *Dioxyna sororcula*. It may, however, be asked just what is implied by "merklich" and also between what points the lower border of the head was measured; in *ignobilis* occasional specimens may have a head that is "noticeably" longer than usual, but even this may be more apparent than real. If the head is so much longer in *munroi*, it could not be *anomalina*, and, since no mention is made of a frontal stripe, the frons must be plain (yellow) so that it could be placed with *ignobilis*; on the other hand, it could not be the new species, *compta*, which has the same wing-pattern but a plain frons and *short* head.

As regards the record for *P. munroi* and the form *apiceguttata* (Hering, 1941, see *anomalina*), Hering, 1944, apparently decided it was an incorrect identification and "transferred" the form to *anomalina*.

[Paroxyna umbritica sp. n.]

Transvaal: Pretoria, Rietvlei, i.1952, holotype ♂, allotype ♀ (ether fixed), 21 ♂, 35 ♀ paratypes; Colbyn, i.1931, 6 ♂, 7 ♀, i.1952, 1 ♂, 6 ♀; Fountains, ii.1936, 2 ♂, 3 ♀; Klapperkop, ii.1950, 19 ♂, 22 ♀; Irene, ii.1952, 2 ♂, 2 ♀. All the foregoing reared from puparia in flowers of *Sonchus dregeanus* collected in and around Pretoria (*H. K. Munro*). Other specimens: Pretoria, i.1923, 1 ♂, 2 ♀, 28.i.1924, 1 ♂, 26.ii.1928, 1 ♂ (*H. K. Munro*). Natal: Drakensberg, S.E. Cathedral area, vii.1946, 1 ♂ (*W. E. Marriott*); van Reenen, xi.1926, 1 ♀ (*R. E. Turner*). Material in Pretoria, except the last specimen, which is in British Museum.

Length, ♂ 3·75 mm., ♀ 4·8 mm.; wing, ♂ 3·3 mm., ♀ 3·9 mm.

Head: length, height, width, 7·5:8:10; a pair of ferruginous spots behind vertex, yellowish black on orbits above, postorbitals 2 white with row of black setae; frons as long as wide, 0·5 width of head, narrower at antennae, deep yellow, brown on either side of black ocellar dot, a moderately strong median stripe, white-dusted on sides, 2 lower orbitals; lunule whitish; antennae as long as face, brown, slightly blackened, upper corner third joint broadly pointed; arista pubescent; face white, brown in grooves, parafacials whitish, narrow,

0·2 antennae and epistome projecting as much; labella as long as mouth-opening, hautellum shorter, palpi 0·75 labella.

Thorax generally blackish, pubescence white, dust grey but with marked brownish tinge, on dorsum 3 brown stripes which show well in specimens fixed in ether, but otherwise specimens tend to become greasy and the stripes are not apparent, a condition that might be taken as "normal"; dorso-centrals just behind suture, pteropleural white; halteres yellow; squamae light brown, upper wide, lower narrow; legs yellowish brown, apical tarsal joints brown, femora black except on outer ends; wing-pattern (Fig. 105) a strong reticulation with darker areas and somewhat anchor-like, appearing strongly speckled, a single large hyaline spot below end of vein 2; scutellum: apical bristles 0·4 basals.

Abdomen black, pubescence white, a median and sublateral grey stripes, a pair of submedian and lateral edges brown, in some lights sides appearing brown to submedian stripes; oviscape legging-shaped, somewhat flattened at base, 0·55 mm., 0·28 wing-length, 0·56 pre-abdomen, shining-black, pubescence black, brown-shining, fine.

Male: tergum 9 posteriorly rounded, cerci slightly constricted, somewhat scoop-like, with thick margins, alveoli of minute marginal hairs conspicuous; flange (Fig. 110) short, with a few larger and more numerous hairs on tubercles giving the surface a somewhat rugose appearance; minor prensiseta about half major, the twisted rods free. Aedeagus (Fig. 115): vesica with apical hood, tube almost to apex, with oval plate at end, the plate seen sideways in smaller figure; pre-aedeagal swelling not marked, a long row of setulae on either side. Sternite 5 (Fig. 113 *c*) indent deep, sides narrow, microsetae on membrane over indent in groups of 2 or 3 arranged more or less concentrically.

Biology

Larvae and puparia are found commonly around Pretoria in flowers of *Sonchus dregeanus*. Usually about 10 puparia in a flower, sometimes a few; in one there were 27.

[Paroxyna anchorata sp. n.**]**

NATAL: Durban (Bluff), x.1934, holotype ♂, allotype ♀, and 1 ♂, 12 ♀ paratypes (*W. E. Marriott*), in flowers of *Launaea bellidifolia*.

Similar to *umbritica*, but rather smaller, differing as follows:

Length, ♂ 3·0 mm., ♀ 3·8 mm.; wing, ♂ 2·9 mm., ♀ 3·1 mm.

Head: antennae a little but distinctly shorter than face, the upper edge usually straight, the apex not forming a point above; parafacials wider, 0·4 antenna; labella and haustellum longer and seem to project more when drawn up.

Thorax: wing-pattern (Fig. 106) more definitely anchor-like and 2 separated spots below end of vein 2, but the spots may become more approximated and in one female are united but still double. Oviscape slightly shorter.

Male: tergum posteriorly rounded, cerci not scoop-like, flange (Fig. 111) short, margin less crenulate, surface appearing smoother with very fine, inconspicuous pubescence and only few larger hairs; minor prensiseta about half major. Aedeagus (Fig. 116): vesica with apical hood, tube to apex, appears twisted at tip, but no plate; pre-aedeagal swelling not marked, long row setulae on either side.

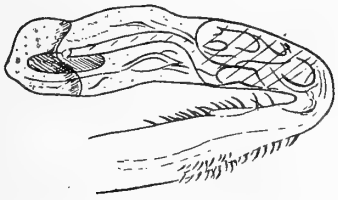

FIG. 114.—*anomalina.*

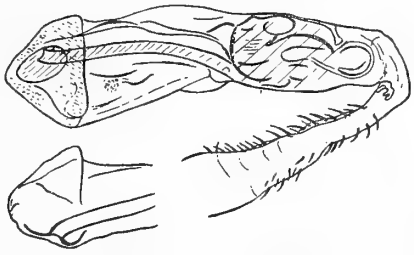

FIG. 115.—*umbritica.*

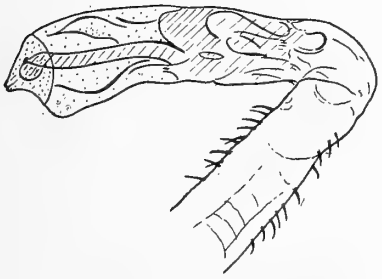

FIG. 116.—*anchorata.*

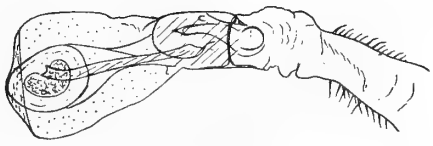

FIG. 117.—*nacta.*

Paroxyna spp., *anomalina* group, aedeagi.

Paroxyna nacta sp. n.

Unfortunately there are only 4 rather damaged specimens:

KENYA: Mt. Kenya, Nanyuki, i.1941 (*W. H. Ghent*), holotype ♂ (dissected), allotype ♀, 2 ♂ paratypes, all in South African National Collection of Insects.

It is like *umbritica*, but the wing-pattern is rather more diffuse, and in the male the microsetae on the membrane over the indent of sternite 5 are arranged singly in radiating rows; the genitalia are much alike.

Length, ♂ 3·3 mm., ♀ 3·2 mm.; wing, ♂ 3·6 mm., ♀ 3·2 mm.

Head: length, height, width, 7:8:10; the eye rather short, length 0·6 height. Frons as wide as long, narrowed to antennae, 0·5 width of head, the median stripe is weak, only marked obliquely from in front, 2 lower orbitals; the third antennal joint is lost in all specimens; compared to second joint, parafacials

would be about 0·25 and epistome projecting about 0·5 third joint; labella and haustellum about as long as mouth.

Thorax: wing (Fig. 107) pattern with 3 darker areas and less reticulation between, the hyaline spots rather less defined; 2 males have a hyaline spot at tip in apical black area; apical scutellars 0·35 basals.

Abdomen mainly brown-dusted, grey at base, on sides and narrow median stripe; oviscape 0·8 mm., 0·25 wing-length.

Male: tergum 9 (Fig. 112) wider than high, broadly swollen posteriorly on either side above flange, cerci somewhat constricted, blunt, more or less scoop-like; flange (Fig. 112 *c*) short, triangular; minor prensiseta about 0·3 major. Aedeagus (Fig. 117); hood at end of vesica more strongly sclerotised, tube nearly to apex with granular plate at tip; pre-aedeagal swelling not marked, a long row of setulae on either side. Sternite 5 (Fig. 113 *b*) anterio-lateral margins rounded, indent about half length, the membrane with microsetae arranged singly in radiating rows.

Paroxyna petulans sp. n.

The over-all appearance and certain peculiarities in the wing-pattern indicate that the 5 females below may represent a distinct species. There are no males with a similar pattern, or that could otherwise be associated with these females, and it is not possible to say definitely whether they belong in this group.

KENYA: Mt. Elgon, Heath Zone, 10,500–11,500 ft., ii.1935, some on flowers of *Helichrysum engleri*, holotype ♀, 4 ♀ paratypes (*F. W. Edwards*).

Length 4·5 mm.; wing 4·0 mm.

Head: length, height, width, 7:8:10; posteriorly black to eye, grey-dusted, postorbitals 2 white with black setae grading to bristles; frons orange, moderate median silvery stripe, broadly white on sides and down parafacials to sides of epistome, as long as wide, slightly less than 0·5 width of head; antennae ferruginous, slightly blackened, strongly so above; parafacials 0·7 width of antennae; genae 0·25 height of eye, bristle whitish; labella and hustellum about as long as mouth-opening.

Thorax: pale pubescence, dust grey and a strong median broad brown stripe on to scutellum, not or slightly divided into three anteriorly, brown above noto-pleural suture, dorso-centrals just behind suture, pteropleural white, apical scutellars 0·4 basals; legs: femora black, ends ferruginous, tibiae ferruginous, slightly blackish, tarsi ferruginous; halteres yellow; squamae brown, upper wide, lower narrow; wing-pattern (Fig. 108) a pale, rather incomplete reticulation; in transmitted light only darker spots at stigma, along costa, at wing-tip and slightly on upper and lower cross-veins with a faint infuscation appearing between, in oblique light an extended pattern appears, as in figure, and this, owing to a larger patch covering upper and lower cross-veins, resembles somewhat the pattern of *ignobilis*, that is, it may look somewhat "speckled".

Abdomen mostly brown dusted, grey on sides and narrow median stripe. Oviscape short, 0·8 mm., 0·16 wing-length, about 0·5 pre-abdomen, shining black, pubescence black, aculeus ferruginous.

[Paroxyna cain Hering]

Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 262, Taf. V, Fig. 21.

Described from Abyssinia. The species appears to belong here, having a frontal stripe and three darker areas on the wing, but the legs are yellow. Apical scutellar bristles stated to be lost in types, but may be assumed to be less than half basals.

IGNOBILIS GROUP

The species placed here may be taken as the central group of Paroxyna in the widest sense, and various palaearctic species probably also belong here. There is a considerable overlapping of characters between these species and those in the *umbritica* group, a clear line of division cannot be made but species may be distinguished by the presence or absence of a median stripe down the

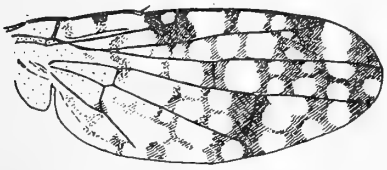

FIG. 118.—*ignobilis*.

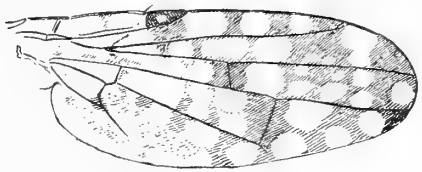

FIG. 119.—*eflorata*.

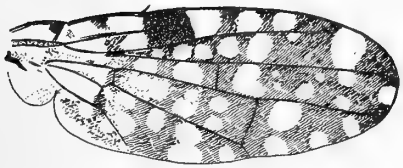

FIG. 120.—*kanabaina*.

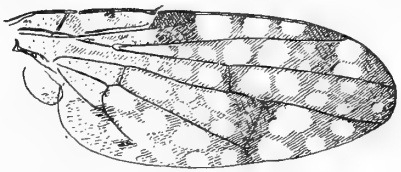

FIG. 121.—*astuta*.

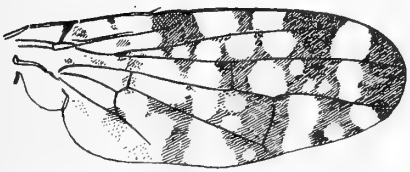

FIG. 122.—*compta*.

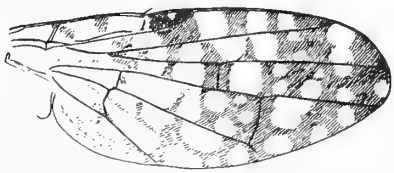

FIG. 123.—*mitrata*.

Paroxyna spp., *ignobilis* group, wings.

frons. This stripe is best observed at right angles to the plane of the frons which, in species of the *ignobilis* group, then appears clear yellow, while, in this position, a stripe is apparent in the other groups. If looked at obliquely a faint, seldom strong, stripe may appear in odd specimens of the *ignobilis* groups. In the latter, too, the aedeagus tends to be more bud-like, as in *ignobilis* itself.

[Paroxyna guttata (Wiedemann)]

Coenosia guttata Wiedemann, 1830, *Aussereurop. zweifl. Insekt.*, **2**: 442.
Paroxyna guttata (Wiedemann) Hering, 1952, *Siruna Seva*, **4**: 12.

Hering compares Wiedemann's type of *guttata* with *ignobilis* Loew, but it is not clear what specimens he may have had, or if he only used Loew's description. A comparison of the contrasted characters given by Hering in relation to what is recorded here on the variability of *ignobilis* makes it seem possible that the latter may be the same as *guttata*, and the types of both are from the "Cape"; at the same time, other species show a more or less similar range of variation. Since the type of *guttata* is a male, the identity of the two could be settled by dissecting the terminalia. It may be noted, too, that Wiedemann placed his *guttata* in the genus *Coenosia* among the Anthomyiidae (there is some sort of superficial resemblance!) and that the name has been "lost", at least to Trypetidae, for over 110 years; the name *ignobilis* is well established for a widespread and common species.

The following is a comparison of Hering's points of difference:

ignobilis	*guttata*
The black area on upper posterior area of head touches vertex at its corners and middle, but the postorbits may *appear* black above.	Posterior part of head only yellow at roots of occipitals, the black otherwise reaching eye-margin at all points.
Dorsal stripes on thorax may be absent, slight to strong, or one broad stripe.	Stripes sharp and well developed.
Abdominal tergal spots may almost be absent, small to large or form a pair of broad stripes.	Spots narrower than the median stripe.
In submarginal cell 2–3 hyaline spots beyond upper cross-vein, above which a hyaline spot or brown streak.	Three hyaline spots beyond upper cross-vein, above which a hyaline spot.
Bars between 3 hyaline spots in marginal cell may be about same width more usually the inner wider.	The second hyaline spot much farther outwards, nearer third than first.
Basal spot in first posterior cell somewhat before lower cross-vein.	Basal spot almost over lower cross-vein.

Paroxyna ignobilis (Loew)

Trypeta ignobilis Loew, 1861, *Berl. ent. Zeit.*, **5**: 293, Plate II, Fig. 23; 1862, *Öfv. K. Vet. Akad. Förh.*, 19, No. **1**: 6. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.
Oxyna ignobilis (Loew) Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 141.
Ensina ignobilis (Loew) Bezzi, 1918, *Bull. ent. Res.*, **9**: 33; 1924, *id.* **15**: 136; 1924, *Ann. S. Afr. Mus.*, **19**: 551.
Ensina ignobilis (Loew) var. *plebeja* Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 551, Plate XIV, Fig. 102; 1924, *Bull. ent. Res.*, **15**: 137; 1928, *Ann. Transvaal Mus.*, **12**: 334. Munro, 1925, *Dept. Agric. S. Afr., ent. Mem.*, No. **3**: 56; 1929, *Ann. S. Afr. Mus.*, **29**: 27.
Paroxyna ignobilis (Loew) Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 264; 1942, *Siruna Seva*, **4**: 12.
Paroxyna ignobilis (Loew) var. *plebeja* (Bezzi) Munro, 1934, *Amer. Mus. Nov.*, **739**: 3.

The following are not this species:

Ensina ignobilis (Loew) var. *plebeja* Bezzi, Munro, 1926, *Dept. Agric. S. Afr., ent. Mem.*, No. **5**: 29 (= *Paroxyna granulata* sp. n. described here).
Paroxyna ignobilis (Loew) and var. *plebeja* (Bezzi) Munro, 1935, *Arb. phys. angew. Ent.*, **2**: 265 (an apparently undescribed species).

This is perhaps one of the most variable of the species of *Paroxyna*, and some incorrect identifications have been made in the past; the specimens recorded (Munro, 1926) are the new species *granulata*, while those from Formosa (Munro, 1935) are certainly different and possibly an undescribed species. However, an analytical study of the British Museum material recorded here, together with many specimens from Eritrea, Kenya and South Africa, leaves no doubt that they are all the one species. It may be that *ignobilis* is the same as *guttata* Wiedemann (q.v.), a name lost for over 110 years, but unless the point can be settled by an examination of the male terminalia of the *guttata* type, it is best to retain the present material under Loew's name.

Comment is made on some of the variable characters, none of which, within the limits of the species, can be considered of specific value; as far as the material shows, none vary in correlation with any other, so that it seems useless or even futile to name "forms" even on extremes of any one character, as, for instance, the name *plebeja* for specimens that happen to have a subhyaline spot in the stigma. On the whole, there is no particular correlation between geographical distribution and any character. The most striking is that South African specimens are generally paler, with a greater tendency towards an unstriped dorsum of thorax and rather paler wing-pattern; specimens from Eritrea have a strong, wide, median dorsal stripe and a rather darker wing-pattern, while East African specimens seem to vary between the two.

The great variation in *ignobilis* is a measure of the variation in the group as a whole; similar and more or less as extensive variation in sundry allied species often makes it difficult to separate them, and the identification of single specimens and of females is at times impossible. The most that may be said at present is that the male terminalia, including the sternites, do help in distinguishing what appear to be good species. This applies in particular to *eflorata*

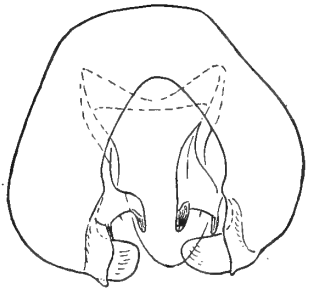

FIG. 124.—*ignobilis*, posterior.

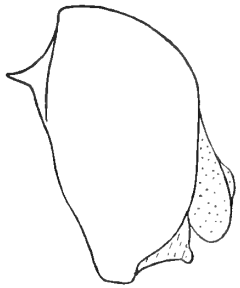

FIG. 125.—*ignobilis*, lateral.

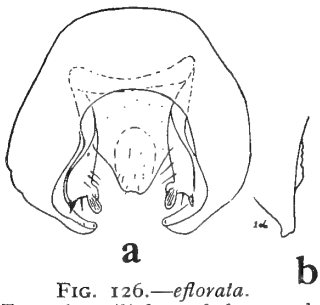

FIG. 126.—*eflorata*.
(*a*) Posterior; (*b*) lateral, lower edge, showing small flange.

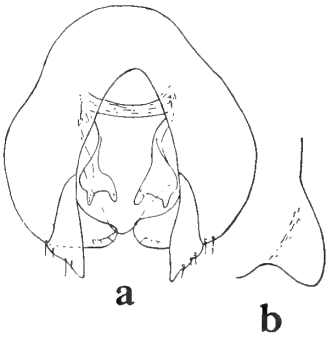

FIG. 127.—*kanabaina*.
(*a*) Posterior; (*b*) flange.

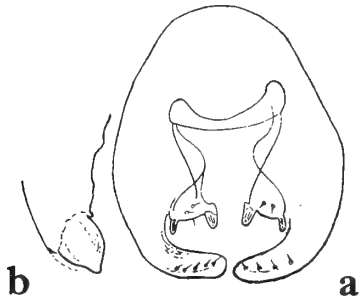

FIG. 128.—*compta*.
(*a*) Posterior; (*b*) flange, lateral.

Paroxyna spp., *ignobilis* group, terga 9.

and *kanabaina* and in general to other very similar species. Females may be identified when directly associated with males, or if the oviscape shows an appreciable difference in length; when, as in the case of *ignobilis* and the two species mentioned, the oviscape is of the same relative length, separation of females is not possible and must await authentic male and female series of the species concerned.

When the British Museum material was first examined, at least three species were confused under *ignobilis*. Only after a male duplicate had been dissected and the terminalia mounted was it realised that more than one species was present and all the specimens had to be re-examined; incidently an odd specimen from Kanaba proved to be still another species.

The records for *ignobilis* and *eflorata* in the British Museum material are listed below together for convenience. With the exception of one female (allotype of *eflorata*) only the males could be definitely identified; both were taken together on Mt. Elgon so the females cannot yet be separated.

	ignobilis	*eflorata*	♀ (*indet*)
KENYA: Aberdare Range, Mt. Kinangop, 9000–10,000 ft., x.1934	5 ♂, 10 ♀	—	—
Above Nakuru, 9300 ft., 6.iii.1935, on *Helichrysum* sp.	—	—	1
Nyeri Track, 10,500 ft.	—	1 ♂, 1 ♀	—
Mt. Elgon, 10,500–11,500 ft., ii.1935 (some on *Helichrysum* spp.)	3 ♂	5 ♂	10
UGANDA: Kigezi district, Mabungo Camp, 18.xi.1934 (*J. Ford*)	2 ♂	—	4
Ruwenzori, Karangora, 9900 ft., 1.ii. 1935	—	—	1
Imatong Mts., 10,000 ft., ii.1936 (*D. R. Buxton*)	1 ♂	—	—

Note: All collected F. W. Edwards unless otherwise noted.

Where only one species is recorded from a locality, the females are probably the same as the males. Slide preparations of terminalia have been made of three males of *ignobilis* and one of *eflorata* for the British Museum.

Good series of specimens from other sources have been used for comparison. The species (as *ignobilis*) was described from the Cape of Good Hope; a few specimens have been taken at Capetown, but for the present needs 20 ♂ and 28 ♀ from Somerset West, near Capetown, have been taken to represent the species. However, there is little difference, if any, apart from normal variation, between these and other South African specimens from East London and Middelburg in the Cape; from South-west Africa; from Durban, Cedara and

Mkuzi in Natal; and from Pretoria and Njelele River in the Transvaal. Other Kenya specimens are from Nairobi and Naivasha, together with several from Eritrea.

Length, ♂ 3·3 mm., ♀ 4·4 mm.; wing, ♂ 3·4 mm., ♀ 4·0 mm.

The shape of the head and of the eye are variable; in most the head is relatively shorter, but may be longer, and may appear so for one reason or another, especially when the eye happens to be more oblique; length of eye about 0·6 height. Posteriorly the black area above the neck sends a ray to each corner of the vertex and one in the middle to ocellar dot, leaving a pair of rather large yellow spots behind vertex, but the median ray may disappear; the wide yellow area behind the upper part of the eye may become more or less blackened, apparently with dust, and occasionally so much so that the median black area does appear extended to the eye-margin. If a head is wet with a drop of xylol and watched as it dries, at a certain point the black stands out very clearly, the postocular area yellow; it becomes obscured again as the xylol dries off and the black dust again becomes apparent. Frons pale yellow, sometimes deeper yellow; no median stripe but in a few specimens there may be an indication of one obliquely, very rarely more distinct, sometimes a little silvery dust before ocellar dot. Antennae 0·75–0·88 length of face. Parafacials 0·4 and epistome projecting about 0·5 width of antennae. Proboscis barely or slightly projecting when drawn up, labella, haustellum and mouth about equal length.

Thorax: dorsum plain with greyish dust, or 3 brown stripes may develop from faint to more distinct, gradually widening till 1 broad median brown stripe is formed; the stripes are more or less confluent before scutellum on to which the brown extends. In South African specimens the dorsum is mostly plain, dust greyish or with a brownish tinge or more distinctly brown; stripes usually weak, sometimes stronger, rarely when viewed obliquely an indication of a broad median stripe. In East African specimens stripes are usually more apparent, and often a single broad stripe, the latter occurring in most Eritrea specimens. Wing (Fig. 118) clear hyaline with a moderate pattern, both the reticulation and the intensity of the infuscation are variable; mostly there are the darker areas that give the speckled appearance with a rather paler, broken reticulation between; some specimens seem normally paler, or have faded, or, if reared, the pattern has not been allowed to darken fully. Apart from general variation in the pattern, the following are normal and usual: the stigma black or with a smaller or larger subhyaline spot in the middle (the latter, the *plebeja* of Bezzi); the marginal cell has as a rule 3 hyaline spots, mostly the full width of the cell, sometimes less, the bars separating them are variable in width, sometimes equal, more often the inner wider and may be twice width of outer; in submarginal there is usually a brown streak above the upper cross-vein, but this may be to one side or the other, leaving a hyaline spot above the vein, or the streak may vanish to leave a large hyaline area; below the end of vein 2 is

a large hyaline spot reaching to vein 3; it may tend to be constricted, rarely faintly divided; the large hyaline spot at base of first posterior cell, its centre somewhat before lower cross-vein is usually constant. Legs: femora strongly to moderately black, or partly black, or varying to yellow with only a trace of black; black in Eritrea specimens. Scutellum, apical bristles 0·36–0·43 basals.

Abdomen: tergal spots generally present and moderate; specimens that have no dorsal stripe on thorax may have no tergal spots, but not necessarily so; the spots, when present, may be tiny to moderate or increase to form a pair of submedian brown stripes with sides and a narrow median stripe grey. Oviscape short, 1·0 mm., 0·25 wing-length, 0·6 pre-abdomen.

Male: several preparations of the terminalia from various localities have been studied and they are all so similar there can be no doubt only one species is represented. Tergum 9 posteriorly (Fig. 124) the cerci short, incurved, flanges as a pair of short spines, laterally (Fig. 125) the flange is short, triangular and pointed, the lower margin of the tergum moderately bifid, the prensisetae normal. The characteristic aedeagus (Fig. 129) with the bud-like, membranous vesica, a tube extending nearly to its apex. This seems to be a basic pattern on which modifications appear in other species. Sternite 5 (Fig. 82) has a deep indent, the sides almost leaf-like, membrane with microsetae in twos and threes on minute platelets.

Biology

Paroxyna ignobilis is probably widespread in Africa, but there are gaps in the known distribution; it is common in South Africa, in Kenya at all altitudes and in Eritrea, but there are apparently no records from Rhodesia and Central Africa generally, nor from West Africa, from Angola around to the Gold Coast.

The host-plant in South Africa and in Eritrea is the common garden thistle, *Sonchus oleraceus*; the plant from which it was reared in Kenya has not been identified, but it is most likely the same. Numerous reared specimens are from the following localities:

Cape: Somerset West, x–xi.1945 (*Flegg & Mally*); East London, vii.1923; Uitenhage (Amanzi) and Dunbrody, xi.1952 (*H. K. Munro*). Natal: Durban, xi.1925 (*C. C. Kent*); Cedara, ii.1935 (*W. E. Marriott*). Transvaal: Pretoria, xii.1949; Njelele River, ix.1939 (*H. K. Munro*). Kenya: Nairobi, viii.1937; Naivasha, viii.1937, and Mt. Kinangop, ix.1937 (*V. G. L. van Someren*). Eritrea: Asmara: adi Sogdo, iv.1948; Bet Gherghis, xii.1948 (*G. De Lotto*).

Paroxyna eflorata sp. n.

The records for this species are given under *ignobilis*, which species the specimens were first taken to be. The great similarity in appearance and in variation is such that these two species as well as *kanabaina* and probably others cannot at present be separated definitely except on the male terminalia.

The identification of the females, as has been noted, must await further authentic, especially reared, material.

KENYA: Aberdare Range, Nyeri Track, holotype ♂, allotype ♀ (taken *in cop.*) (*F. W. Edwards*). The aedeagus of the male is exposed so it is possible to see that it is the same as the preparation of a paratype male from Mt. Elgon. Mt. Elgon, 5 ♂ paratypes (2 in South African Nat. Coll., Pretoria). Only the one allotype female could be definitely accepted as *eflorata*.

In its over-all characters and their variation, *eflorata* is quite like *ignobilis* as far as may be judged from the relatively few specimens. Wing (Fig. 119): in all the frons is plain yellow with no indication of a frontal stripe; the head on the whole *appears* more elongate than usual in *ignobilis* and the single broad brown stripe on dorsum of thorax showed hardly any sign of dividing into three. Here too it was thought that all with the broad stripe might be *eflorata* since it is absent in South African *ignobilis*; however, when authentic *ignobilis* with a broad stripe came from Eritrea, the specimens had to be checked again and further dissections of Kenya males showed that some of them with the broad stripe were also *ignobilis*.

The chief and marked difference between *eflorata* and *ignobilis* is in the male terminalia, noticeably larger on the specimen in *eflorata*. Tergum 9 (Fig. 126) rounded in posterior aspect, cerci somewhat constricted and scoop-like on inner side; major prensiseta large, minor small. In lateral aspect narrowed below, the flange a very short ridge (Fig. 126 *b*), not prominent as a pair of points from behind. Aedeagus (Fig. 130), basal capsule short, vesica large with 2 strong, sclerotised rods and an elongate tube from base; in 2 preparations the membrane of the vesica has remained somewhat folded over, in a third it is flared out; the moderate pre-aedegal swelling with a row of strong setulae on either side. Sternite 5 (Fig. 83), indent about half length, membrane with some fine, single hairs.

Paroxyna kanabaina sp. n.

Very like *ignobilis* and *eflorata*, differing in the "hooded" aedeagus and tergum 9 with long, pointed flanges. Only the male holotype: UGANDA: Kigezi district, Kanaba, 7800 ft., xi.1934 (*F. W. Edwards*). With 3 slides of male terminalia and of wing.

Length 3·5 mm.; wing 3·4 mm.

Head: length, height, width, 7:7·5:10; posteriorly yellow below, black above, the black touching eye-margins leaving a pair of moderate yellow spots behind vertex, postorbital bristles 3 whitish and row of black setae; frons yellow, no median stripe, half width of head and slightly longer than wide; antennae 0·85 face, arista micropubescent; parafacials 0·3, epistome projecting 0·6 width third antennal joint; labella, haustellum and mouth-opening of equal length.

Thorax black, a broad, median brown stripe tending to 3 stripes in front, grey dust on sides; pubescence pale, sparse, coarse; dorso-centrals at suture; femora black; apical scutelar bristles 0·5 basals; wing (Fig. 120) stigma black.

Abdomen black, brown tergal spots wide, almost forming stripes, grey between and grey on sides. Tergum 9 (Fig. 127 *a*) somewhat swollen below, cerci broad, inturned, scoop-like on inner side, flange (Fig. 127 *b*) large, triangular, prominent, appearing as a pair of points postero-dorsally; prensisetae subequal; aedeagus (Fig. 131); vesica not very voluminous, tube from base about two-thirds length and a pair of thin rods bearing a bent-over "hood" at end; small patches of pre-aedeagal setulae; sternite 5 indent moderate, 0·46 length.

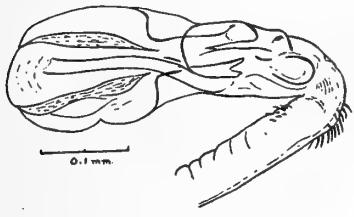

FIG. 129.—*ignobilis*.

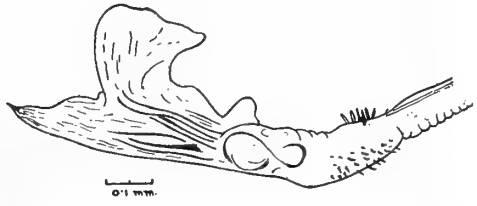

FIG. 130.—*eflorata*.

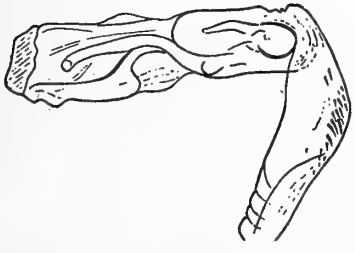

FIG. 131.—*kanabaina*.

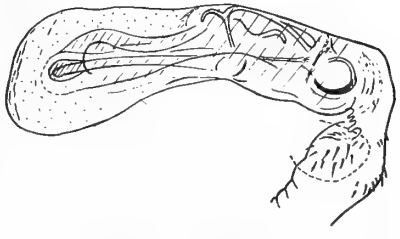

FIG. 132.—*astuta*.

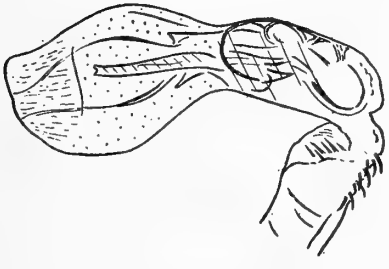

FIG. 133.—*compta*.

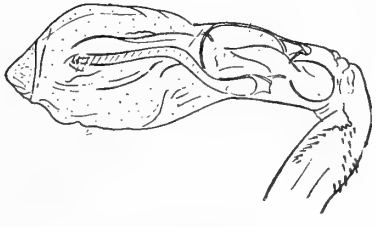

FIG. 134.—*mitrata*.

Paroxyna spp., *ignobilis* group, aedeagi.

Paroxyna astuta sp. n.

Like *ignobilis*, but with yellow legs.

UGANDA: Ruwenzori, Nyamgasani Valley, 6400 ft., xii.1934, holotype ♂, 1 ♂ paratype (*D. R. Buxton*). ABYSSINIA: Managasha, 3600 ft., 18.v.1914 (*O. Kovács*) (British Museum). KENYA: Nairobi, viii.1937, allotype ♀, 3 ♀ paratypes; Chyulu Hills, vii.1937, 1 ♂, 6 ♀ paratypes, from flowers of Compositae, 1 ♂, 6 ♀ (*V. G. L. van Someren*); Chyulu Hills, 5600 ft., 2 ♂, 5 ♀ paratypes, Coryndon Mus. Exp. (Coryndon Museum).

Length, ♂ 2·5 mm., ♀ 4·0 mm.; wing, ♂ ♀ 3·5 mm.; larger ♀, 4·7 mm.; wing 4·1 mm.

Head ochraceous; length, height, width, 7·5:9:10; posteriorly black above, shading to yellow below, behind vertex and on postorbits moderate yellow margin, 2–3 postorbital bristles with black setae, beard pale yellow; frons deep yellow, a trace of median stripe very obliquely, width 0·9 length, 0·75 at antennae, 0·5 head, bare, 2 lower orbitals; lunule yellow, moderate; antennae ochraceous, 0·8 face, third joint width 0·4 length, arista micropubescent; face: epistome projecting 0·5 third antennal joint, parafacials narrow 0·3 the joint; genae 0·2 height of eye, bristle pale yellow; labella and haustellum about equal length and a little longer than mouth-opening; palpi yellow, flat, 0·8 length of labella.

Thorax black; dorsum: generally less variable, dust dense, pale brown, extending on to upper pleura, in 3 British Museum specimens stripes barely indicated anteriorly; in allotype ♀ and others dorsum greyer, stripes more marked but not strong, pubescence pale yellow; on pleura and postscutellum dust grey, pleural pubescence pale, bristles normal, dorso-centrals at suture; halteres ochraceous; squamae pale yellow, upper wide, lower narrow; legs ochraceous, coxae black, first pair only slightly; wing (Fig. 121) pale reticulate pattern rather like *ignobilis*, variable as usual, no subhyaline spot in stigma in these specimens, usually 1 large hyaline spot below end of vein 2, but it may be divided into two; in first posterior cell a large hyaline spot at base sometimes extending beyond lower cross-vein, at apex a small spot that usually tends to disappear, between a double row of variable and irregular spots; above upper cross-vein is a streak, also variable in position; scutellum as mesonotum, width 0·6 length, apical bristles 0·4 basals.

Abdomen black, tergal spots larger in male, smaller in female, but may be more extensive in both, grey dusted on sides and base and a moderate median stripe, the rather long pubescence pale, a trace of black pubescence on brown spots; oviscape 0·8 mm., 0·2 wing-length, flat, shining black and black pubescence.

Male: tergum 9 about as in *ignobilis*, flange short, inconspicuous, with an irregular, crenulate margin; aedeagus (Fig. 132); vesica with tube thickened at

end almost to apex and hook-shaped rod, pre-aedeagal setulae in short patches; sternite 5 posterior and lateral margins together broadly rounded, indent deep, sides narrow.

[Paroxyna compta sp. n.]

In general like *ignobilis*, wing-pattern like *anomalina* and probably somewhat intermediate between the two.

KENYA: Chyulu Hills, vii.1938, holotype ♂, allotype ♀, Coryndon Museum Expedition (male terminalia on three slides).

Length, ♂ 3·0 mm., ♀ 3·5 mm.; wing ♂ 2·9 mm., ♀ 3·3 mm.

Head: length, height, width, 7:8:10; bristles and coloration as *ignobilis*, 1 or 2 pale postorbitals, the row of black setae tending to paler bristles; frons pale yellow, in female a trace of median stripe very obliquely; as long as wide, 0·5 width of head, rather narrowed in front; antennae slightly shorter than face, brownish yellow, arista brownish, short pubescent; labella, haustellum and mouth-opening about equal.

Thorax: dorsum grey with broad median brown stripe, notopleura and pleura more or less brown; dorso-centrals at suture; legs ochraceous, femora black except at ends; wing-pattern (Fig. 122) reduced to form more or less a V as in *anomalina*.

Abdomen brown, tergal spots large, median stripe and sides grey, pubescence pale; female with black apical setae on tergites 5 and 6; oviscape short, 0·75 mm., 0·25 wing-length, 0·5 pre-abdomen.

Male: tergum 9 (Fig. 128 *a*) oval, flange (Fig. 128 *b*) short, broadly triangular, cerci elongate, finger-like, turned in at right angles; prensisetae normal. Aedeagus (Fig. 133) very like *ignobilis*, vesica large with weak hood, pre-aedeagal setulae weak, in two small patches; indent sternite 5, 0·3 length.

[Paroxyna mitrata sp. n.]

Like *ignobilis*.

KENYA: Mt. Kinangop, ix.1937 (*V. G. L. van Someren*), holotype ♂, from flower of a Composite.

Length 4·2 mm.; wing 4·0 mm.

Head: length, height, width, 7·5:8·5:10; posteriorly black, 2 yellow spots behind vertex, a yellow margin on postorbits but this appears black, 2–3 postorbitals, the black setae grading to bristles; frons deeper yellow, no stripe, slightly silvery on sides and vertical plates, width 0·9 length, 0·5 head, narrowed to antennae; antennae 0·9 face, brownish yellow, apex above very broadly rounded, arista black, micropubescent; face: parafacials 0·4 third antennal joint, genal bristle yellow; labella, haustellum and mouth-opening about equal.

Thorax black, pubescence yellowish, a broad brown median stripe somewhat divided into three anteriorly, dorso-centrals at suture, pteropleural yellowish brown; femora only slightly blackened, fore most, mid least; halteres yellow;

squamae yellowish, upper wide, lower narrow; wing (Fig. 123) like *ignobilis*; apical scutellar bristles 0·5 basals.

Abdomen black, pubescence moderate, whitish, longer white bristle-hairs on sides, tergite 5 with black apical bristles, dark spots forming submedian, dark brown stripes, narrow, median, grey stripe almost disappears on tergites 2 and 3, wider and yellowish on 5; sternites pale brown. Tergum 9 rather swollen below, cerci broad, scoop-like, flanges short, pointed; prensisetae subequal; aedeagus (Fig. 134): vesica bud-like (cf. *ignobilis*) with apical hood not quite as strong as in *kanabaina* (Fig. 131); pre-aedeagal setulae fine, hair-like; sternite 5 almost trapezoidal, indent shallow.

DESMELLA gen. n.

Like *Paroxyna*; 2 lower orbitals, a strong median frontal stripe; labella elongate, proboscis projecting well beyond epistome when drawn up; usually a pair of strong dorso-central stripes and a weak median on dorsum of thorax; 4 scutellar bristles, apicals 0·5 basals or less; wing-pattern well marked, transverse bars usually arranged YII, but hyaline spots may develop and the pattern gradually become mainly reticulate, but the barred arrangement generally remains apparent with characteristically a hyaline spot or space in first posterior cell above lower cross-vein.

Type species: *Trypeta anceps* Loew.

Species of the *anceps-myiopitoides* complex are placed here. For the most part material available is South African, and there is none in the British Museum East African collections. Some comment must, however, be made to complete the general discussion on the *Paroxyna* s.l. complex. Much material on hand is awaiting detailed study that cannot be undertaken here. Some species seem to be clearly defined, but there is such variation in coloration and especially in wing-pattern that the limits between species on these characters tend to disappear, and the accumulation of more and more specimens only makes the position more difficult. On the other hand, preliminary studies on the male terminalia appear to indicate that on these structures, it may be possible to recognise a few, if not more, well-defined species; the description of "new" species on slight or even on moderate differences in wing-pattern, etc., may thus be futile.

[**Desmella anceps** (Loew) comb. n.]

Trypeta anceps Loew, 1860, *Öfv. K. Vet. Akad. Förh.*, 5; 1861, *Berl. ent. Zeit.*, **5**: 283, Plate II, Fig. 17. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.

Ensina anceps (Loew) Bezzi, *Boll. Soc. ent. Ital.*, **39**: 140; 1918, *Bull. ent. Res.*, **9**: 33; 1924, *id.* **13**: 136; 1924, *Ann. S. Afr. Mus.*, **19**: 550.

Ensina anceps (Loew) var. *fasciolata* Bezzi, *Ann. S. Afr. Mus.*, **19**: 550, Plate XIV, Fig. 100; 1924, *Bull. ent. Res.*, **15**: 137; 1928, *Ann. Transv. Mus.*, **12**: 334. Munro, 1926, *Dept. Agric. S. Afr. ent. Mem.*, No. **5**: 28; 1929, *Ann. S. Afr. Mus.*, **29**: 26.

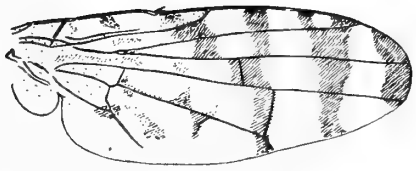

FIG. 135.—*anceps.*

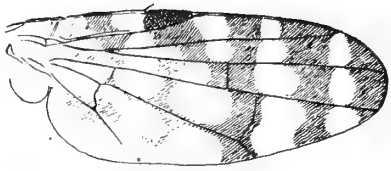

FIG. 136.—*clarinetta.*

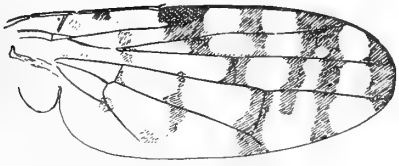

FIG. 137.—*myiopitoides*, s.l. var.

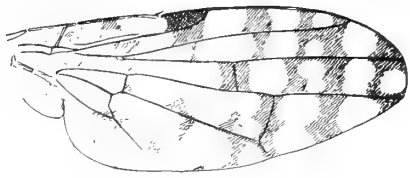

FIG. 138.—*myiopitoides*, s.l. var.

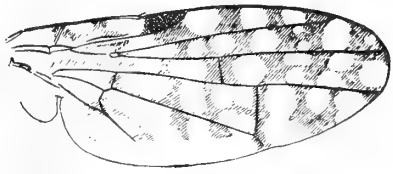

FIG. 139.—*myiopitoides*, s.l. var.

Desmella spp., wings.

The wing-pattern (Fig. 135) is normally banded, sometimes very heavily so, but there is a tendency for hyaline spots to develop on the bands. The var. *fasciolata* is based on specimens with a subhyaline spot in stigma, but this is a usual variation; an apical spot is less common.

The species is widespread in South Africa, breeding in the flowers of various Compositae (Munro, 1926). There are odd specimens in the British Museum taken by R. E. Turner between 1925 and 1933 at various localities: Capetown, Worcester, Somerset East, Mossel Bay, Katberg and Aus, and one Kimberley, 10.ii.1921, C. E. Godwin.

[**Desmella clarinetta** (Munro) comb. n.]

Paroxyna clarinetta Munro, 1939, *J. ent. Soc. S. Afr.*, **2**: 152.

The types from Matjesfontein, Cape, are in the British Museum. Much material has since been collected and reared from the type locality and elsewhere.

A larger species that may be recognised by the long, white pubescence on the abdomen, absence of spots and very long oviscape. Wing (Fig. 136).

[Desmella conyzae (Frauenfeld) comb. n.]

Trypeta conyzae Frauenfeld, 1856, *Wien. Sitz. Ber.*, **22**: 555, Fig. 11. Loew, 1861, *Berl. ent. Zweit.*, **5**: 285. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.
Ensina Conyzae (Frauenfeld) Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 140.
Tephritis conyzae (Frauenfeld) Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 105, 127, Plate I, Fig. 14, Plate V, Fig. 4.
Paroxyna conyzae (Frauenfeld) Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 151.

Only recorded from Egypt; whether *myiopitoides* is closely allied is an open question. *Conyzae* may be distinguished by the heavier basal band on the wing-pattern, but material is needed for a closer comparison with *myiopitoides*.

[Desmella myiopitoides (Bezzi) *sens.lat.*; comb. n.]

Ensina myiopitoides Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 158; 1924, *Bull. ent. Res.*, **15**: 136; 1924, *Ann. S. Afr. Mus.*, **19**: 551, Plate XIV, Fig. 101. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 56; 1926, *id.* No. **5**: 28; 1929, *Ann. S. Afr. Mus.*, **29**: 27.

Based on a female from Eritrea, specimens from South Africa have been identified as the same. Much material has been collected and reared in South Africa during the past twenty-five years, and it is evident there may be a complex of species. There is so much variation in general coloration and wing-pattern from banded (Fig. 137) to reticulate (Fig. 138) that it is almost impossible to make any classification. Incorrect identifications have been made, specimens often being taken for *Paroxyna ignobilis* and others. One feature on the wing may, as a rule, serve to identify specimens that belong here, that is, there is a hyaline spot or space above the lower cross-vein. Some preliminary work has been done on the male terminalia, but it will take time before studies can be completed. Some doubt may also persist until material from Eritrea is available; unfortunately in the large collections made by Mr. G. De Lotto in Eritrea he did not get *myiopitoides*. A few specimens from Kenya may belong here, otherwise the material is South African.

SCEDELLA gen. n.

Like *Paroxyna*.

Head short, 2 lower orbitals; labella about half length of mouth-opening; dorso-central behind suture, about one-third distance to anterior supra-alars; 4 long scutellars; wing-pattern sometimes reticulate, more usually reticulate-banded, typically a band over both cross-veins and an apical dark area (band) separated by a more or less complete pre-apical hyaline band, the subapical row of spots from tip of vein 2 to tip of vein 4 not developed, but always a spot below vein 2, a moderate to large apical spot, absent in one species, sometimes a broad band along costa and around end of wing; pattern may be darker and

heavier, if reduced it is not possible to decide whether derived from banded or reticulate form (cf. Figs. 149 and 153), vein 3 bare above a few setulae below. Abdominal tergal spots well developed; oviscape variable in length, more often long, but females may be difficult to identify without authentic males. Sternite 5, indent usually moderate, the membrane in the angle clothed with fine hairs, except in *dissoluta* and *spatulata*, with microsetulae. Tergum 9 normal, or slightly swollen below, usually narrower than high; cerci broad and inturned,

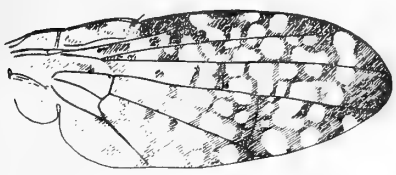

FIG. 140.—*glebosa*.

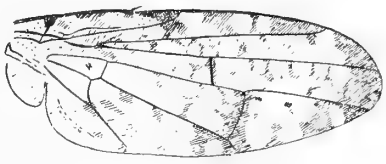

FIG. 141.—*pilosa*.

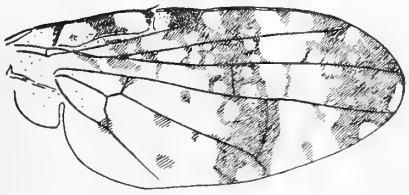

FIG. 142.—*caffra*.

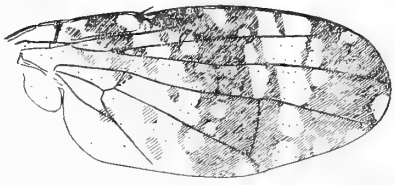

FIG. 143.—*sandoana*.

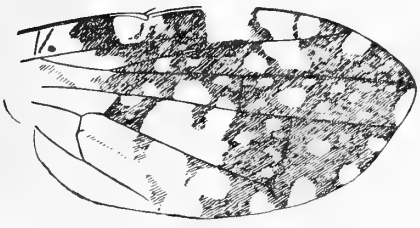

FIG. 144.—*cyana*.

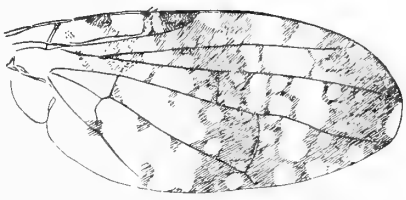

FIG. 145.—*boxiana*.

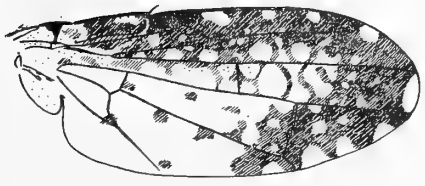

FIG. 146.—*praetexta*.

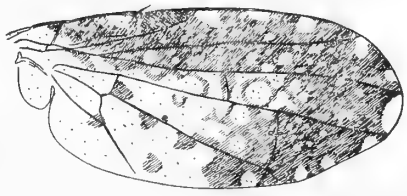

FIG. 147.—*praetexta*, var.

Scedella spp., wings.

the lower edge sometimes carinate; flange absent or very small; prensisetae subequal, or minor about half major. Aedeagus; vesica moderate to large, reduced in *dissoluta* and *spatulata*, patches of minute cornuti possibly present in all, but not often visible; patches of pre-aedeagal setulae, usually 2, in eversible pockets, or less obviously so, variable, dorsal patch usually fine falcate hairs, the lateral stout and short setulae.

Type species: *Trypeta caffra* Loew.

Caffra series: of these species, *praetexta* has a characteristic wing-pattern; *longiseta*, doubtfully here, has an evanescent reticulate pattern; others are like *caffra*, varying from pale to dark and heavy. No specimens that could positively be *cyana* have been seen; a sketch made by Mr. Oldroyd from the type shows the pattern to be the heaviest of all, and apparently wider than usual.

[Scedella glebosa sp. n.]

Differs from other species in the more reticulate wing-pattern and the pre-aedeagal tubercle surmounted by setulae.

KENYA: Nairobi, 15.iii.1951 (*G. De Lotto*) (SAL. 1028/2), holotype ♂, allotype ♀, 2 ♂ paratypes. Terminalia of male type mounted on three slides.

Length, ♂ 2·9 mm., ♀ 4·0 mm.; wing, ♂ 3·4 mm., ♀ 3·6 mm.

Head oval; length, height, width, 7·25:7·5:10; yellow, behind blackish in middle, eye rounded oval, 6–7 postorbitals thick yellowish with some black setulae; frons deep yellow, anteriorly a slight median stripe, bare, width 0·85 length, 0·45 width of head, 2 lower orbitals, ocellars moderate; antennae yellow, 0·85 face, arista short pubescent; face brownish down middle, epistome flat, the barely projecting sides with pale yellow pubescence, parafacials and genae narrow, the bristle pale.

Thorax blackish, yellowish from humeri to wing-base, pale yellow pubescence, dust moderate, brownish, bristles black, normal, pteropleural white, dorso-centrals a little behind suture; legs yellowish brown; wing (Fig. 140) reticulate, median bar much broken up by hyaline spots and barely apparent, apex dark, no apical spot; halteres and squamae brownish; scutellum yellow, base dark, flat, length 0·6 width, 4 bristles, apicals 0·8 basals.

Abdomen blackish, dust dark grey, submedian brown spots weak on anterior half of tergites, pubescence rather long, sparse, pale; oviscape brownish yellow, black on apical fourth, slightly longer than pre-abdomen, 0·36 wing-length; pubescence black, pale shining.

Male: sternite 5 (Fig. 155 *a*) rather wide, broadly rounded, indent shallow, the membrane with fine hairs; tergum 9 oval, cerci somewhat spatulate, carinate below, flange short, margin crenulate, minor prensiseta about half major; aedeagus (Fig. 163); vesica large, membranous, a smaller group of pre-aedeagal setulae on a prominent tubercle.

[Scedella pilosa sp. n.]

Very like *glebosa* but apparently a larger species, the head shorter, frons square and oviscape much longer.

KENYA: Bungoma, x.1952 (*W. H. Ghent*), holotype ♀, reared from a puparium in flower of a Composite (South African Nat. Coll., Pretoria).

Length 5·2 mm.; wing 4·5 mm.

Head: length, height, width, 6:7·5:10; distinctly shorter as is the eye, yellowish, posteriorly black in middle, postorbitals 6–7, thick, whitish with a trace of black setulae; frons deeper yellow in middle, a slight median stripe obliquely, as wide as long, 0·43 width of head, 2 lower orbitals, ocellars moderate; antennae shorter, 0·75 face, arista rather longer pubescent; face brown in middle, epistome very slightly prominent, parafacials and genae narrow, bristle and lateral pubescence pale.

Thorax blackish, yellow from humerus to wing-base, dust moderate, golden brown, strong dorso-central stripe on to scutellum, very weak median, pubescence pale yellow, bristles normal, pteropleural white, dorso-centrals just behind suture; legs brownish, more or less blackened; wing (Fig. 141) membrane yellowish, a paler, brownish, more broken up reticulate pattern, apex dark, at most in this one specimen, a bare trace of an apical hyaline spot; scutellum slightly convex; length 0·6 width, 4 bristles, apicals 0·9 basals.

Abdomen blackish, dust grey, yellowish in middle of tergite 6, stronger, brown, submedian spots on tergites 3, 4 and 5. Oviscape ferruginous, black at base and apical third, pubescence black, pale shining, 2·0 mm., 0·44 wing-length, 1·6 pre-abdomen.

Scedella caffra (Loew) comb. nov.

Trypeta caffra Loew, 1860, *Öfv. K. Vet. Akad. Förh.*, 6; 1861, *Berl. ent. Zeit.*, **5**: 290, Plate II, Fig. 21. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.

Oxyna caffra (Loew) Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 141.

Euribia caffra (Loew) Bezzi, 1918, *Bull. ent. Res.*, **9**: 37; 1924, *id.* **15**: 138; 1924, *Ann. S. Afr. Mus.*, **19**: 557, Plate XV, Fig. 111; 1928, *Ann. Transv. Mus.*, **12**: 334. Munro 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **3**: 57; 1929, *id.* No. **6**: 15; 1929, *Ann. S. Afr. Mus.*, **29**: 29.

Mesoclanis (*Paroxyna*) *illuminata* Hering, 1939, *Verh. VII. Internat. Kongr. Ent.*, **1**: 181, Abb. 16 (syn. nov.).

Paroxyna caffra (Loew) Munro, 1935, *Dept. Agric. S. Afr. ent. Mem.*, No. **9**: 42.

Frontal stripe not strong, but usually distinct; dorso-central stripes on thorax strong, median weak; dorso-central bristles about half-way between suture and anterior supra-alars; femora black, occasionally only hind pair; wing-pattern (Fig. 142) darker with more distinct bands, apical hyaline spot variable, moderate, sometimes large or may almost vanish, hyaline spot in stigma usually full width, or reduced to a small costal spot or with a smaller spot below; legs yellow, all femora black on basal half or more. Oviscape short, 1·0–1·25 mm., 0·28–0·3 wing-length, 0·5–0·75 pre-abdomen.

Male: sternites (Fig. 155 *b*) wide, 5 with shallow indent; tergum 9 rounded posteriorly, somewhat swollen below, cerci broad and blunt, not appearing scoop-like, prensisetae large, about equal, flange very short, margin smooth; aedeagus (Fig. 164); vesica membranous, rather large, on pre-aedeagal swelling, laterally a moderate group of short, broad, blunt setulae, not observed to be retractile, dorsally a sclerotised plate.

A common species from South to East Africa and the Congo; not recorded from West Africa. There was only one specimen in the British Museum material:

Uganda: Ruwenzori Range, xii.1934–i.1935, 1 ♀; Fort Portal, Mpanga Forest, 15.xii.1934 (*F. W. Edwards*); B.M., 1935–203 (the femora are not quite as black as usual).

Other material that may be recorded is:

Kenya: Nairobi, Chyulu Hills, Rabai, various specimens, 1937–1938, mostly reared from Compositae, probably *Vernonia* spp. (*V. G. L. van Someren*) (Coryndon Museum); Ngong, i.1943, 1 ♂ (*V. G. L. van Someren*). Portuguese East Africa: Mapalene, vii.1953 (*Paterson*). Southern Rhodesia: Salisbury, iii.1951 (*H. K. Munro*); Eastern Caprivi, near Katima Mulilo, 14.vii.1952 (*H. K. Munro*). South Africa: from the Cape (East London) through Natal to the Central and Eastern Transvaal; many rearings have been made from species of *Vernonia*: *V. fastigiata, hirsuta, monocephala, natalensis* and *steetziana.* The Caprivi specimens were from *Vernonia steetziana,* those from Salisbury from *Adenostemma viscosum,* the only recorded host-plant so far not a *Vernonia.*

[**Scedella sandoana** sp. n.]

A dark grey, almost blackish species with heavily marked wings; the femora are black as in *caffra,* but it may be distinguished by the sloping frons and reticulation across the second posterior cell joining the apical and median bands.

Congo: Sandoa, Katanga, ii.1932, holotype ♂ (*F. G. Overlaet*); Ruanda, Kibungu, 2.ii.1953, 1 ♀ paratype (*P. Basilewsky*) (in Congo Museum, Tervuren). Kenya: Bungoma, x.1952, allotype ♀ (*W. H. Ghent*), from flower of Vernonia sp. (S. Afr. Nat. Coll. Ins., Pretoria).

♂ Length and of wing, 3·5 mm.

Head brown; length, height, width, 6:8:10; eye perpendicular, cephalic bristles as in other species; frons flat, sloping, the frontofacial angle wide and the angle between frons and vertical axis acute, yellowish brown, a narrow median stripe and narrowly on sides silvery, slight pale pubescence anteriorly, about as wide as long and 0·5 width of head; lunule short; antennae darker brown, 0·9 face, arista rather long pubescent; face brown, epistome slightly prominent, parafacials almost linear, genae narrow, the bristle pale; labella 0·5 mouth-opening; palpi normal.

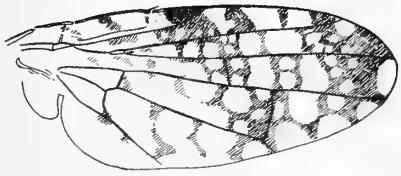

FIG. 148.—*dissoluta.*

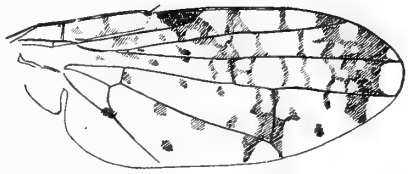

FIG. 149.—*dissoluta*, var.

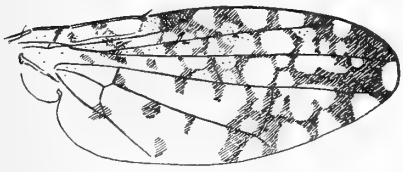

FIG. 150.—*spatulata.*

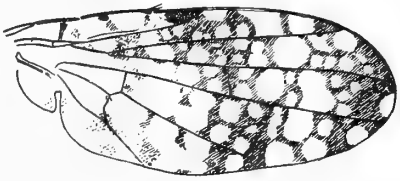

FIG. 151.—*incurva.*

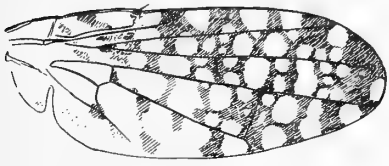

FIG. 152.—*flecta.*

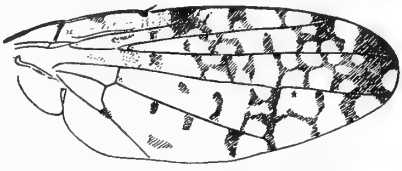

FIG. 153.—*flecta*, var.

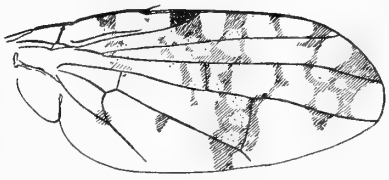

FIG. 154.—*kawandana.*

Scedella spp., wings.

Thorax black, dense blackish grey dust, dorsal stripes weak or hardly apparent in some lights, bristles black, no scapulars, 1 mesopleural, 1 white pteropleural, dorso-centrals half-way between suture and anterior supra-alars; halteres and squamae brown, upper wide, lower narrow; legs straw yellow, fore and mid femora black on proximal two-thirds, hind on proximal three-fourths; wing (Fig. 143) yellow hyaline, heavy apical and median bands blackish, with few spots, the two connected by reticulation across second posterior cell; third vein bare; scutellum flat, yellow, base blackened, rounded at end, 4 bristles, apicals 0·7 basals.

Abdomen black, oval, dense blackish-grey dust, hind edges of terga 3, 4 and 5 slightly yellowish, moderate, black, submedian spots on middle of terga 3 and 4, on 5 larger but less apparent on blackish dust; pubescence white.

Male: sternites (Fig. 155 *c*) hind edges yellow, 5 with indent 0·3 length, fine hairs on membrane in angle; tergum 9 (Fig. 156) rounded, cerci broad, scoop-like, flange very short, slightly crenulate, minor prensiseta about half major; aedeagus (Fig. 165); vesica large, no rods, a projecting membranous sac tipped with minute cornuti; pre-aedeagal swelling slight, a lateral patch of long, falcate bristles and a few dorsal hairs.

The female from Bungoma is, as far as may be judged, especially on the wing-pattern, the same species as the male from Sandoa. Length 3·5 mm., wing 3·0 mm., oviscape 1·0 mm., about as long as pre-abdomen, yellow, black at base and tip, pubescence black, pale shining, fine.

[Scedella cyana (Walker) comb. n.]

Trypeta-Noeeta cyana Walker, 1849, *List. Dipt.*, **4**: 1031.
Trypeta cyana (Walker) Loew, 1861, *Berl. ent. Zeit.*, **5**: 254. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.
Carphotricha cyana (Walker) Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 141.
Campiglossa cyana (Walker) Bezzi, 1918, *Bull. ent. Res.*, **9**: 39, and editorial footnote as *Euribia*.
Euribia cyana (Walker) Bezzi, 1924, *Rev. zool. Afr.*, **12**: 16; *Bull. ent. Res.*, **15**: 138, and *Ann. S. Afr. Mus.*, **19**: 555.

This species, described from Sierra Leone, has not been seen since its first description in 1849. The type is a female so it may be impossible to locate the species correctly until more material from the type locality has been examined.

In general appearance it must be much like others of the group (*caffra*, etc.); from a sketch of the wing (Fig. 144, redrawn) kindly made by Mr. Oldroyd, the pattern, while similar, is much heavier than in any of the others, so much so that the pre-apical hyaline bar is almost obliterated; the sketch, too, indicates a wing wider than usual.

[Scedella boxiana sp. n.]

Very like *Paroxyna caffra* Loew, but legs are yellow (femora black in *caffra*) and stigma distinctly shorter (slightly longer than width at base, in *caffra* twice as long); on the wing the pre-apical hyaline band, more or less broadly reticulate, is more complete in *caffra*, the inner end of the second posterior cell being hyaline, while in this there is a continuous broad reticulation across the cell, joining the apical and median bands. In *dissoluta* the legs are also yellow, and the stigma shorter, but the wing-pattern is more broken up, the dark bands not so marked and the oviscape longer.

CAMEROONS: Kumba, 17.x.1949, holotype ♂ (*H. Oldroyd*) (in British Museum). GOLD COAST: Bunsu, vi.1943, allotype ♀, 1 paratype ♂ with terminalia on 3 slides (*H. E. Box*), reared from flowers of *Aspilia latifolia* (Compositae) in roadside hedges (S. Afr. Nat. Coll. Ins.). BELGIAN CONGO: Haut-Uele: Paulis, xii.1947, 2 ♂ paratypes (*P. L. G. Benoit*), 1 male with terminalia on 3 slides (Coll. Mus. Congo, Tervuren).

Grey; length, ♂ 3·5 mm., ♀ 4·0 mm.; wing, ♂ 3·8 mm., ♀ 3·8 mm.

Head brownish; length, height, width, 6:8:10; eye large, perpendicular, frontofacial angle rounded, bristles of postocular row white, 3 or 4 postorbitals with black setulae; frons flat, as long as wide, 0·5 width of head, yellow on middle anteriorly with stripes on either side black ocellar dot, sides broadly and a wide median stripe silvery, slight pale pubescence anteriorly, bristles black, 2 lower, 2 upper (hind white) orbitals, ocellars moderate; lunule short; antennae a little shorter than face (0·9), deep yellow, arista pubescent; face yellowish, epistome slightly prominent, parafacials and genae narrow, the bristle pale; proboscis: labella and haustellum about 0·8 mouth-opening.

Thorax black, rather dense, dark grey dust, 3 moderate brown stripes on dorsum, sides from humeri to wing-base brownish and a brown spot on middle of mesopleura; pubescence, also on scutellum, rather sparse, coarse, whitish; bristles black, no scapulars, dorso-centrals half-way between suture and anterior supra-alars, 1 mesopleural, 1 white pteropleural; squamae whitish, upper wide, lower narrow; halteres brown; legs straw yellow, mid and hind femora very slightly blackened at middle; wing (Fig. 145) costal bristle moderate, stigma shorter, third vein bare; pattern: well-marked median and apical dark bands with few hyaline spots, united below across second posterior cell by broad reticulation, otherwise mainly hyaline; scutellum flat, triangular yellow, basal third blackened, 4 bristles, apicals 0·8 basals.

Abdomen black, dense dark grey dust, hind edges of terga narrowly yellowish, 5 in ♂ more widely, in ♀ well-marked, round, submedian black spots, half width of terga on 3, 4 and 5, in ♂ spots on 3 and 4 rounded, on 5 elongate; apical bristles strong; oviscape flat in specimen, ferruginous black at each end, pubescence fine, black. Length 1·1 mm., 0·3 mm. wing-length and a little shorter than pre-abdomen.

Male: sternite 5 (Fig. 155 *d*) indent about 0·3 length, membrane with fine hairs; tergum 9 (Fig. 157) ferruginous, oval, cerci scoop-like seen somewhat obliquely from above, not carinate below; flange almost absent or an indication of what is seen in *flecta* (Fig. 162 *c*); prensisetae subequal; aedeagus (Fig. 167); basal portion appears small, or is not marked off from rather massive sclerotisation in vesica which ends in a wide hood; pre-aedeagal swelling moderate, a dense dorsal patch of falcate setulae that may be eversible and a lateral patch of fewer, short, stout setulae.

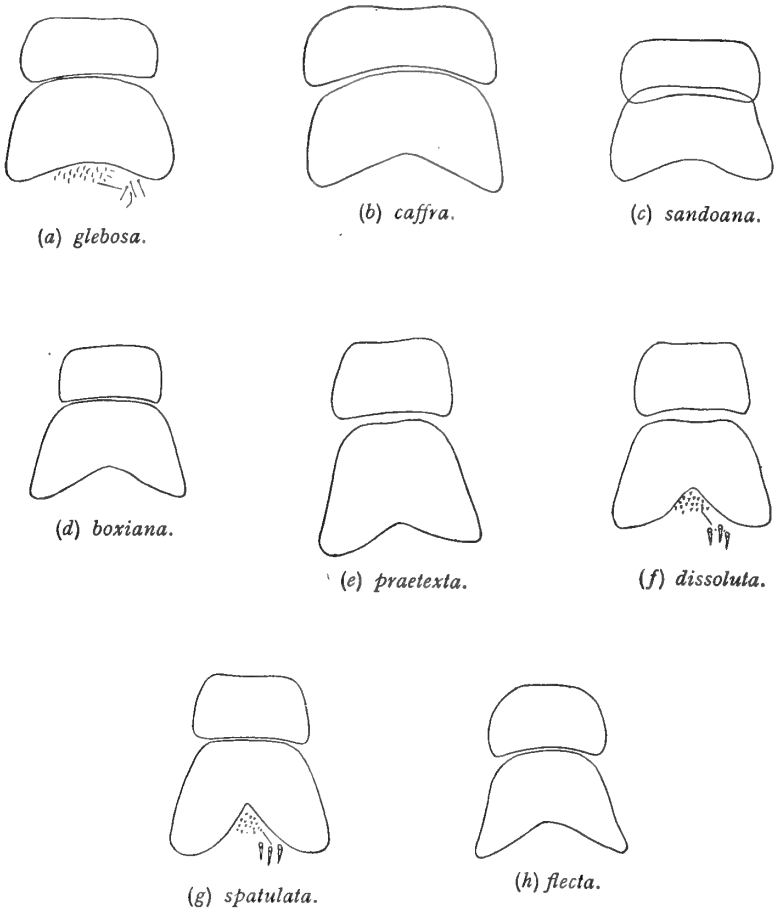

FIG. 155.—*Scedella* spp., sternites 4 and 5; clothing on membrane in indent is microspinulose in (f) and (g), in the others fine hairs as in (a).

Scedella praetexta (Loew) comb. n.

Trypeta praetexta Loew, 1860, *Öfv. K. Vet. Akad. Förh.*, 5; *Berl. ent. Zeit.*, **5**: 286, Plate II, Fig. 19. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.

Oxyna praetexta (Loew) Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 141.

Euribia praetexta (Loew) Bezzi, 1918, *Bull. ent. Res.*, **9**: 36; 1924, *id.* **15**: 138; 1924, *Ann. S. Afr. Mus.*, **19**: 554, Plate XV, Fig. 108; 1928, *Ann. Transv. Mus.*, **12**: 334. Curran, 1927, *Bull. Amer. Mus. Nat. Hist.*, **57**: 89. Munro, 1929, *Ann. S. Afr. Mus.*, **29**: 29.

Euribia (*Tephritis*) *praetexta* (Loew) Bezzi, 1924, *Rev. Zool. Afr.*, **12**: 16.

Paroxyna praetexta (Loew) Munro, 1935, *Dept. Agric. S. Afr. ent. Mem.*, No. **9**: 42; 1938, *Rev. Zool. Bot. Afr.*, 31: 172.

Length, ♂ 4·0 mm., ♀ 5·0 mm.; wing, ♂ 3·8 mm., ♀ 4·0 mm.; occasional specimens a little larger, while in reared series there are usually a few quite small.

This widespread species is readily recognisable by the wide, blackish-brown band along costa and around end of wing to about middle of hind margin; there is a more or less regular row of marginal hyaline spots with a large apical spot, rather few hyaline or subhyaline spots on the band and broadly reticulate inside the hook, the lower, inner part of the wing with a few isolated dark spots; Loew's figure shows a heavier band with less reticulation in the hook. The main picture of the pattern (Figs. 146, 147) remains constant but there is much variation in detail: the band may have more or fewer small hyaline spots especially in submarginal cell; it may be widened and the inner reticulation reduced (more so in Congo specimens), in occasional South African specimens the reticulation may become larger, more broken up and evanescent, and larger spots on the band; third vein bare above, below usually 1–3 or 4 setae, or sometimes to upper cross-vein; the lower cross-vein may be almost straight and directed towards the outermost spot in the marginal cell, or curved inwards with the upper end towards the middle of the marginal cell and nearer the upper cross-vein; because of this the second posterior cell may vary in width. In a few specimens the wing is even wider than usual.

Oviscape 1·5 mm., 0·4 wing, as long as or rather longer than pre-abdomen.

Male: sternite 5 (Fig. 155 *e*), indent shallow, fine hairs on membrane; tergum 9 (Fig. 158) oval, cerci short, spatulate above, carinate below, flange triangular, very finely saw-toothed and densely covered with minute, seta-like hairs, prensiseta subequal; aedeagus (Fig. 166); base not heavily sclerotised, vesica reduced; pre-aedeagal swelling rather large, there is a large dorsal group of strong falcate setulae; mostly these are seen as a compact bunch drawn into a sac, but they may be exerted to form a brush of backwardly directed setulae on the wide swelling from the side of which the aedeagus projects.

The type is from "Caffraria" and it is probable that Wahlberg collected it somewhere in the neighbourhood of Durban, Natal. The species is common from Natal and the Transvaal, through Southern Rhodesia and the Congo to East Africa. No specimens have been seen from the west nor from Eritrea.

British Museum specimens are:

Uganda: Kigezi district, Mabungo camp, 6000 ft., 3 ♂, 5 ♀ (*J. Ford*); 1 ♂, Kanaba, 7800 ft., 1 ♂, Mt. Muhavura, 7000 ft., 1 ♂, 3 ♀ Masaka, 13.xi.1934 (*F. W. Edwards*); Kampala, 19.xii.1933, 2 ♂, 1 ♀ (*H. Hargreaves*).

In the Pretoria collection are large series from South Africa (Natal and Transvaal, Southern Rhodesia and Belgian Congo.

Biology

The identification of the earlier recorded host-plant, *Melanthera brownei* (Munro, 1935), may be incorrect and a specimen of the plant is not available

for checking. It has recently been reared from *Wedelia natalensis*, Tshakoma, North Transvaal, i.1954, H. K. Munro.

Scedella dissoluta (Loew) comb. n.

Trypeta dissoluta Loew, 1861, *Berl. ent. Zeit.*, **5**: 291, Plate II, Fig. 22; 1862, *Öfv. K. Vet. Akad. Förh.*, **1862**: 6. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.
Oxyna dissoluta (Loew) Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 141.
Euribia dissoluta (Loew) Bezzi, 1918, *Bull. ent. Res.*, **9**: 37; 1924, *id.* **15**: 138; 1924, *Ann. S. Afr. Mus.*, **19**: 558.
Paroxyna (*Mesoclanis*) *dissoluta* (Loew) Hering, 1944, *Siruna Seva*, **5**: 8.
Euribia tristrigata Bezzi, 1918, *Bull. ent. Res.*, **9**: 37, Plate I, Fig. 9; 1924, *id.* **15**: 138; 1924, *Ann. S. Afr. Mus.*, **19**: 558. Munro, 1929, *Ann. S. Afr. Mus.*, **29**: 29.
Paroxyna tristrigata (Bezzi) Munro, 1935, *Dept. Agric. S. Afr. ent. Mem.*, No. **9**: 42.
[Not *Euribia tristrigata* Bezzi, Munro, 1934, *Amer. Mus. Nov.*, **739**: 2 = *spatulata* sp. n.]

Loew's type, a male, was also taken by Wahlberg in "Caffraria"; this was probably on the Natal coast near Durban, which may be accepted as the type locality, and there can be no doubt that South African specimens are Loew's species. Bezzi described his *tristrigata* from Eritrea and specimens with long oviscape from there indicate that Bezzi's name is a synonym. The species is common in South Africa and probably extends continuously to Eritrea.

A smaller species, ♂ 3·2 mm., ♀ 3·75 mm.; wing, ♂ ♀ 3·0 mm.; larger ♂ 3·8 mm., ♀ 5·0 mm. Median stripe on frons strong. Dorsal stripes on thorax usually moderate, may be stronger or weaker; wing-pattern (Figs. 148, 149) variable, the reduced pattern in Fig. 149 may be compared with that of *flecta* (Fig. 153); when reticulation reduced, bands still apparent, markings at base of first posterior cell "808", apical hyaline spots usually large, there is as a rule a short ray over tip of vein 4, but it may tend to disappear and is occasionally absent as in Loew's figure, the tip of submarginal cell above end of vein 3 is black; in one specimen out of 116 there is a slight hyaline spot there; vein 3 bare above, below a few setulae, rarely a row to upper cross-vein; legs yellow.

Abdomen: well-marked, moderate, dark submedian spots on tergites, the posterior yellow margins variable. Oviscape elongate, 1·0–1·25 mm., 0·33 wing-length, as long as, or a little longer or shorter than pre-abdomen.

Male: sternite 5 (Fig. 155 *f*) posterior corners rounded, indent 0·4 length; tergum (Fig. 159) posteriorly vertically oval, flange a very narrow smooth ridge, cerci turned in at right angles, their upper margins sclerotised to form a blunt point, lower margins carinate; twisted rods appear free, prensisetae subequal, somewhat projecting behind, major shorter and broader, minor longer and narrower; aedeagus (Fig. 168 *a*, *b*); base strongly sclerotised, "rods" curved dorsally to form a bird's beak shape, no apical vesica, but below a wide membranous sac with some microcornuti at its end; a large eversible mass of falcate setulae on pre-aedeagal swelling, shown drawn in and exserted in the two figures.

The three species, *dissoluta*, *spatulata* and *flecta*, are all very much alike, the last differing somewhat more from the other two than they do from each other. Mention may be made of some indeterminate females recorded under *spatulata*.

UGANDA: Kigezi district, Mt. Muhavura, 7000 ft., xi.1934, 2 ♀ on *Conyza schimperi* ssp. *longepapposa* (*F. W. Edwards*) (British Museum). KENYA: 6 ♂, 5 ♀, Rabai, viii.1937 (Coryndon Museum), and 1 ♂, 2 ♀, Ngong, ix.1946 (*V. G. L. van Someren*), from flowers of Compositae; Nairobi, vii.1937 (*V. G. L. van Someren*), 2 ♂ from Composite 120. The specimens, 4 ♂, 5 ♀, recorded from Composite 120, present a problem since on the male terminalia three species (2 ♂, *dissoluta*, 1 ♂ *spatulata* and 1 ♂ *flecta*) are represented, the females thus being indeterminate; other females are noted under *spatulata*.

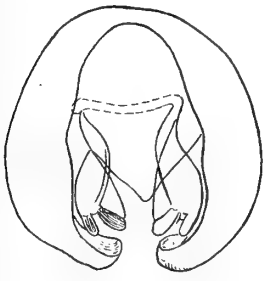

FIG. 156.—*sandoana*, posterior.

FIG. 157.—*boxiana*, posterior somewhat oblique, small fig. cercus in more level view.

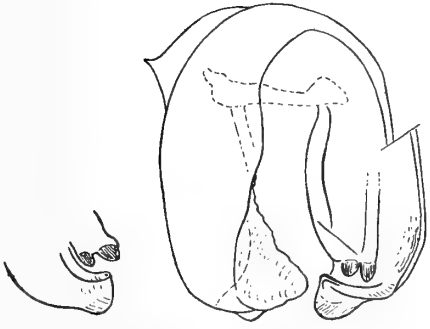

FIG. 158.—*praetexta*, posterior, lateral oblique, showing flange and carinate cercus; small fig. cercus in more level view.

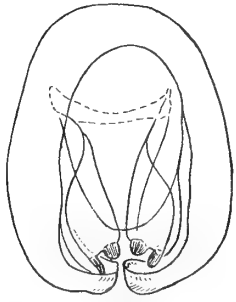

FIG. 159.—*dissoluta*, posterior.

Scedella spp., terga 9.

Other material is mainly from the Natal coastal area, Umkomaas to Durban and some specimens from Barberton, Transvaal, Kaoko Otavi, South-west Africa and Nyasaland. Specimens from Eritrea were collected by G. De Lotto at Asmara (Bet Gherghis) in December 1948.

The earlier recorded host-plant, *Melanthera brownei*, may be a Wedelia. The species was reared from *Wedelia menotriche*, Bulawayo, Southern Rhodesia, March 1951, H. K. Munro.

Scedella spatulata sp. n.

Euribia tristrigata Munro (*nec* Bezzi), 1934, *Amer. Mus. Nov.*, **739**: 2.

This species is so like *dissoluta* that it can only be separated on the male terminalia. When it was discovered on dissecting a male that had been retained from the 1934 material that it was a distinct species, Dr. C. H. Curran kindly returned the specimens in the American Museum of Natural History and said that the types could be retained here in Pretoria.

It was necessary to make numerous dissections of male terminalia of what appeared to be *dissoluta*, with the result that specimens from other areas were also found to be this new species. At the same time, females cannot as yet be identified unless authentically associated with males.

Holotype ♂ with terminalia on 3 slides and 1 wing mounted; allotype ♀, 1 ♂, 1 ♀ paratypes (S. Afr. Nat. Coll. Ins.), 4 ♂, 4 ♀ paratypes, terminalia of 1 ♂ on 3 slides (Amer. Mus. Nat. Hist.).

Abyssinia: Addis Ababa, 5.vii.1920. Uganda: Kigezi district, Mabungo Camp, 6000 ft., 21.x.1931, 2 ♂, 1 ♀ paratypes (*J. Ford*) (British Museum). Nyasaland: Cholo (*R. Wood*) (in S. Afr. Nat. Coll. Ins., received from Commonwealth Institute of Entomology as *Euribia tristrigata*, apparently identified at British Museum, but not recorded by Bezzi). Kenya: Nairobi, ix.1937, 1 ♂ paratype and 3 slides (*V. G. L. van Someren*); associated with this male and a male paratype of *flecta*, all with the same data, are 3 indeterminate females, all the specimens being caught. 1 ♂ paratype with 3 slides, Nairobi, vii.1937 (*V. G. L. van Someren*), from Composite 120 (Coryndon Museum), associated with 1 ♂ of *flecta* and 2 of *dissoluta*, and 5 indeterminate females as noted under *dissoluta*.

The following indeterminate females may be *dissoluta*, *spatulata* or *flecta*:

Kenya: Rabai, viii.1937, 1 ♀ caught on bait; Nairobi, vi.1937, 2 ♀ on Lantana (*V. G. L. van Someren*); Nairobi, vii.1937, 1 ♀ (*H. J. A. Turner*) (Coryndon Museum).

The species is quite like *dissoluta* in all external characteristics, and the two are indeed very close differing mainly in the aedeagus.

Size as for *dissoluta*. Wing-pattern (Fig. 150) variable.

Male: sternites (Fig. 155 *g*), membrane over indent of sternite 5 with

microsetulae as in *dissoluta*; tergum 9 similar, flange a very short, smooth ridge; prensisetae subequal. Aedeagus (Fig. 169 *a*, *b*), the figures show the curious spatulate structure extending to the apex; it seems too that the aedeagus is oriented to the pre-aedeagal swelling at right angles to what is the case in *dissoluta*, cf. Fig, 168 *a*, *dissoluta*, a lateral view, and Fig. 169 *b*, *spatulata*, dorsal, but it could not be discovered whether or not this is normal. The large group of pre-aedeagal setulae is probably also eversible, but did not show in this position in any of the preparations.

[Scedella spiloptera (Bezzi) comb. n.]

Tephritis spiloptera Bezzi, 1913, *Mem. Ind. Mus.*, **3**: 165, Plate X, Fig. 68. White, 1924, *Cat. Ind. Ins.*, 4, *Tryp.* 28.

Paroxyna spiloptera (Bezzi) Hendel, 1928, *Ent. Mitt.*, **18**: 369. Hering, 1944, *Siruna Seva*, **5**: 8.

It appears that only the two males that Bezzi had and a later female are known. Hering, 1944, placed *spiloptera* as a synonym of *dissoluta*, but this cannot be so if the female recorded by Hendel from Ceylon is Bezzi's species. In this female the oviscape (Basalstück der Legeröhre) is stated to be as long as the last 3 tergites, so is relatively shorter and broader at the base, while in *dissoluta* the oviscape is as long as the pre-abdomen—twice as long as the 3 tergites—and narrower at the base. The males are from Calcutta, India, and females are needed from there as well as more males for dissection.

There is no direct evidence that Hendel's female is Bezzi's species, nor need it necessarily be the same as the species described here as *kawandana*, in which also the oviscape is short, almost as recorded by Hendel.

Scedella incurva sp. n.

Distinguished by the golden brown dust on dorsum of thorax and appearance of pre-aedeagal groups of falcate setulae.

UGANDA: 20 miles north of Kampala, 18.x.1950, holotype ♂ with terminalia on 3 slides, 3 ♂ paratypes (*J. M. McGough*) (Type and 1 paratype in S. Afr. Nat. Coll. Ins., 2 paratypes in U.S. Nat. Mus.). Specimens all somewhat eaten by pests in the post.

Length 3·8 mm.; wing 3·5 mm.

Head brownish, black behind above neck; length, height, width, 7·5:9:10; eye, length/height, 0·6; postorbitals a few long white bristles and some short, black setulae; frons deep yellow, grey on sides and a strong, wide, median stripe, slight pubescence before lunule, flat, square, 0·5 width of head, bristles normal, 2 lower orbitals; lunule short, pale yellow; antennae 0·8 face, joint 3 slightly blackish brown, 2 more yellowish, arista pubescent; face brownish in middle, epistome projecting about half width of antennae, parafacials 0·4, genae as wide as antennae, bristle pale.

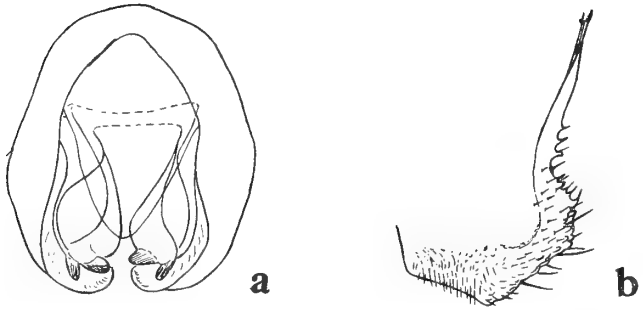

FIG. 160.—*incurva* (*a*) posterior, (*b*) lower margin laterally greatly enlarged, the flange about 0·25 height of tergum.

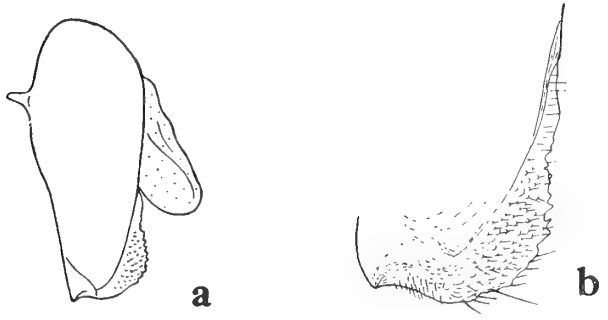

FIG. 161.—*caesia*, (*a*) lateral, (*b*) lower margin, the flange about 0·3 height of tergum.

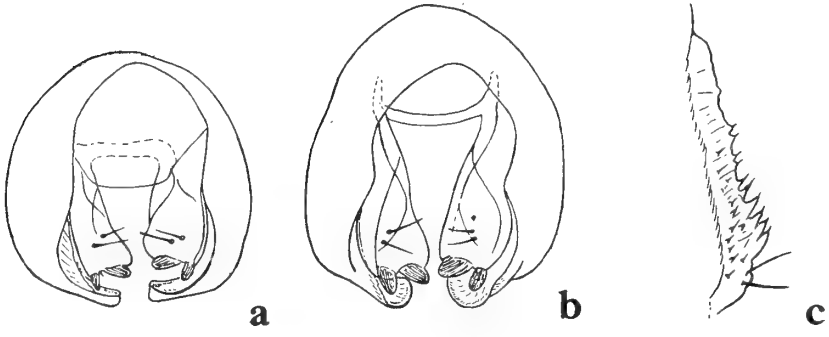

FIG. 162.—*flecta*, (*a*) posterior level view, (*b*) somewhat obliquely from above, (*c*) flange, enlarged, about 0·3 height.

Scedella spp., terga 9.

Thorax: dorsum, dust dense, golden brown, median and dorso-central stripes weak, pubescence white; pleura blacker, moderate grey dust below, brown above, bristles normal, dorso-centrals half-way between suture and anterior supra-alars; scutellum flat, triangular, brown, 4 bristles, apicals 0·6 basals; legs brown; wing (Fig. 151) bands marked and a reticulation across second posterior cell, vein 3 bare.

Abdomen: tergites black, yellowish on hind fourth, hind half of 5, moderate grey dust, weak submedian spots only apparent on 1 paratype; pubescence pale. No female available.

Male: sternite 5, indent moderate 0·3 length, angular, membrane with fine hairs; tergum 9 (Fig. 160 with flange) vertically oval, cerci scoop-like, flange short, moderately setose, margin irregular, minor prensiseta about half major, or subequal; laterally tergum 9 like *caesia* (Fig. 161), but no marked anterior point below, and flange differs. Aedeagus (Fig. 170, *a*, *b*, *c*), vesica membranous but with somewhat spiral thickening as seen in figures *b* and *c*, the finely setose sac also seen in *c*; moderate pre-aedeagal swelling with a dorsal, elongate group of thinner, falcate setulae and an elongate lateral of thicker setulae, the dorsal group at least may be eversible and may then give a picture more like Fig. 171 for *caesia*.

[Scedella caesia sp. n.**]**

Close to the previous species, but dorsum of thorax distinctly blue.

Uganda: 20 miles north of Kampala, 18.x.1950 (*J. M. McGough*), holotype ♂, allotype ♀.

Length, ♂ 3·0 mm., ♀ 3·5 mm.; wing, ♂ 3·5 mm., ♀ 3·25 mm.

Head yellow, behind moderately black above neck; length, height, width, 7:8:10; eye, length/height 0·7, postorbital bristles 4 or 5 long white with black setulae; frons deep yellow, grey on sides, strong median stripe, slight pubescence before lunule, as wide as long, a little narrower at antennae, 0·5 width of head, 2 lower orbitals; lunule short, pale yellow; antennae 0·9 face, brownish yellow arista short pubescent; face: epistome slightly projecting, parafacials 0·4, genae as wide as antennae, bristle pale; labella a little shorter than mouth-opening.

Thorax dust slate-grey, distinctly bluish, the 3 brown stripes moderate, pleura blackish, grey dust below; bristles normal, pteropleural white, dorso-centrals half-way between suture and anterior supra-alars; scutellum yellowish, a brown spot on either side, 4 bristles, broken in male, in female, apicals 0·9 basals; legs brown; wing quite like that of *incurva* (Fig. 151).

Abdomen: pre-abdomen in both specimens partly eaten away; oviscape 1·0 mm., about as long as pre-abdomen, 0·3 wing-length, ferruginous, dark at base and apex, pubescence dark, pale shining.

Male: sternite 5, posterior corners rounded, indent shallow, concave, barely 0·2 length, membrane with microsetulae in more or less concentric rows;

tergum 9 (Fig. 161, laterally and flange), posteriorly like *incurva* (Fig. 160), laterally a rather marked anterior point below, flange appearing rugose owing to rather dense hairs on raised alveoli, margin irregularly saw-toothed. Aedeagus (Fig. 171 *a*, *b*); the two figures show slightly different aspects; the dorsal group of setulae more exserted; apart from the generally different appearance between this and *incurva*, *caesia* has a transverse bar near the base of the aedeagus, absent in *incurva*. In the preparation of *caesia* the aedegaus seems to be at right angles to the pre-aedeagal swelling compared to that for *incurva*; it has not been possible to discover whether or not this is accidental.

[Scedella flecta sp. n.]

KENYA: Chyulu Hills, holotype ♂, terminalia on 3 slides (iv.1938), allotype ♀ (vii.1938), 1 ♂ paratype, terminalia on 3 slides (vi.1938), 1 ♂ paratype (v.1938), 1 ♀ paratype (vi.1938), Coryndon Museum Expedition; Nairobi, vii.1937, 1 ♂ paratype, terminalia on 3 slides, from Composite 120 associated with *spatulata* and *dissoluta* (q.v.) (*V. G. L. van Someren*).

It is reasonable to assume that the 2 females from Chyulu Hills are the same species as the males. The specimens are rather larger than usual for *dissoluta* and *spatulata*, and the wing-pattern more completely reticulate. The single male from Nairobi is smaller and the wing-pattern somewhat reduced (Fig. 153), but the male terminalia are similar.

Length, ♂ 3·5 mm., ♀ 4·5 mm.; wing ♂ ♀ 3·8 mm.

Head brownish yellow, moderately black above neck; length, height, width, 7:8:10; postorbitals a few long white and some black setulae; frons as wide as long, a little narrowed at antennae, 0·5 width of head, orange, grey on sides and strong median stripe, 2 lower orbitals; lunule short, pale yellow; antennae 0·8 face, deep brownish yellow, arista short pubescent; face: parafacials 0·4, genae 0·8 width antennae, bristle pale; labella about 0·75 mouth-opening.

Thorax: dust slate-grey, brown stripes moderate, pleura black with grey dust, pubescence white; bristles normal, dorso-centrals about half-way between suture and anterior supra-alars; legs brown; squamae yellow, upper wide; halteres brown; scutellum yellow, dark spot on sides, 4 bristles, apicals 0·9 basals; wing (Figs. 152, 153) a more complete, brown reticulation, the median bar not marked, more reduced in Nairobi specimen.

Abdomen: dust slate-grey, brown submedian spots small, pubescence white; oviscape orange, tip dark, 1·1 mm., 0·8 pre-abdomen, 0·3 wing-length.

Male: sternite 5 (Fig. 155 *h*) rounded anteriorly, posterior corners more angular, indent about 0·3 length; tergum 9 (Fig. 162, *a*, *b*, *c*) cerci scoop-like, carinate below, seen more level in Fig. 162 *a*; flange (Fig. 162 *c*) narrow, somewhat setose, margin saw-toothed; minor prensiseta about half major. Aedeagus (Fig. 172); vesica moderate, somewhat sclerotised to form S-shaped piece at end

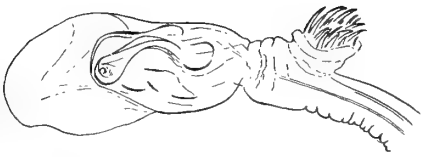

FIG. 163.—*glebosa.*

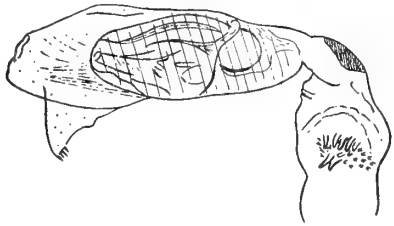

FIG. 164.—*caffra.*

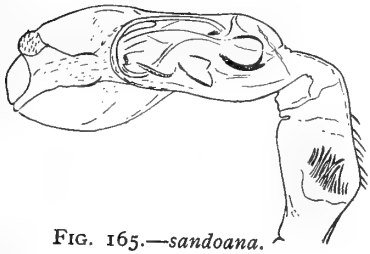

FIG. 165.—*sandoana.*

FIG. 166.—*praetexta.*

FIG. 167.—*boxiana*, smaller fig., apex at right angles to larger.

FIG. 168.—*dissoluta*, (*a*) dorsal falcate setulae drawn in, (*b*) exserted.

Scedella spp., aedeagi.

and with a membranous sac with microsetulae (cornuti) much like *incurva*; a large, pre-aedeagal group of falcate setulae probably eversible, also a smaller, more lateral group shown withdrawn in smaller figure.

[Scedella kawandana sp. n.]

A light-coloured species allied to *caffra* and *dissoluta*; legs yellow as in *dissoluta*, femora black as in *caffra*, and both have well-marked dorsal thoracic stripes, barely perceptible here; wing-pattern more reduced even than in *dissoluta*, in which the oviscape is longer, about as long as pre-abdomen and 0·3 wing-length, in *caffra* about half pre-abdomen or rather more, 0·3 wing-length, while here about half pre-abdomen and only 0·2 wing-length. In regard to the shorter oviscape, see also notes under *spiloptera*.

UGANDA: Kampala, 29.viii.1939 (*H. Hargreaves*), holotype ♀.

Length 3·9 mm.; wing 3·7 mm.

Head brown, relatively longer and squarish; length, height, width, 8:8:10; the eye rounded oval, bristles normal; frons moderately sloping, yellow in middle of anterior half, otherwise more or less blackened, broadly silvery on sides and wide median stripe, about as long as wide and half width of head; lunule short; antennae yellowish brown, 0·8 face, arista pubescent; face: epistome slightly prominent, parafacials and genae moderate, bristle brown; labella 0·7 mouth-opening.

Thorax dust dense, grey, stripes weak, barely apparent, brownish from humeri to wing-base; bristles normal, dorso-centrals half-way between suture and anterior supra-alars; legs yellow; wing-pattern (Fig. 154) reduced, third vein bare; scutellum flat, yellow, black at base, 4 bristles, apicals 0·7 basals.

Abdomen black, dense, dark grey dust, hind edges of tergites narrowly yellowish, submedian dark spots half width of tergites proximally on 3, 4 and 5, small on 6; pubescence sparse, whitish; oviscape flat in specimen, ferruginous, black at tip and basal third blackened, pubescence fine, black, 0·75 mm., about as long as or rather longer than tergites 4, 5 and 6 together, 0·2 wing-length.

[Scedella longiseta (Hering) comb. n.]

Paroxyna longiseta Hering, 1941, *Ann. naturhist. Mus. Wien*, **51**: 203, Taf. XX, Fig. 9.

Recorded from Tanganyika. It is difficult to say where this species belongs and it may not be a *Paroxyna* s.l. Assuming it has 2 lower orbitals, and with the short head and 4 long scutellars (stated to be of equal length), it may be placed nearer *caffra*, but the figure of the wing shows no more than an evanescent reticulation.

FIG. 169.—*spatulata*, (*a*) lateral, (*b*) dorso-ventral.

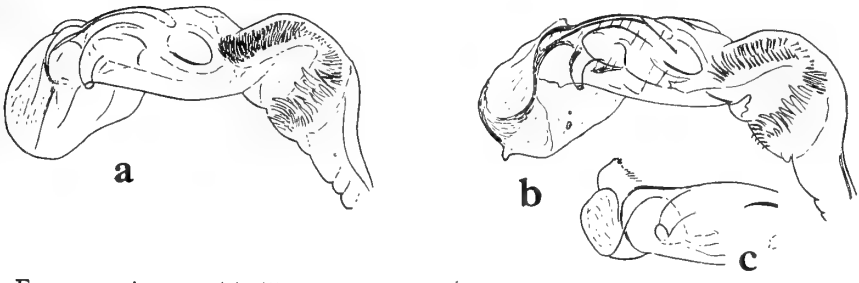

FIG. 170.—*incurva*, (*a*), (*b*) slightly different lateral views; (*c*) apex at right angles to other two showing setose, membranous sac.

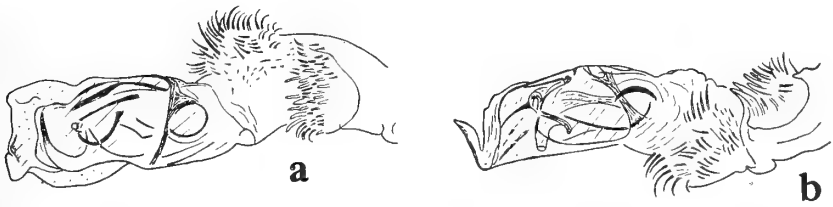

FIG. 171.—*caesia*, (*a*) lateral, (*b*) slightly dorsal.

FIG. 172.—*flecta*, small fig. shows small group lateral setulae drawn in.

Scedella spp., aedeagi.

MESOCLANIS Munro

Munro, 1938, *Proc. R. ent. Soc. Lond.*, B, **7**: 120; 1950, *J. ent. Soc. S. Afr.*, **13**: 37–52.
Hering, 1944, *Siruna Seva*, **5**: 6.

This genus was reviewed in 1950; Hering's interpretation in restricting it to species with a median stripe on the frons cannot be accepted. A revised guide to the species is included in the general guide in this paper; through an oversight *polana* was omitted from the earlier tables.

The wing is always infuscated to extreme base along costa; the pattern may be reticulate-banded with clear hyaline spots, or more or less dimidiate with numerous, small, subhyaline spots. The vesica is usually moderate to strong, and a transverse band or bar near base of aedeagus; pre-aedeagal setulae: a moderate row above and a group more or less in a pocket below. The shape of the flange is characteristic.

Other species included in this genus will be found in the general tables for the *Paroxyna* series, couplet 64, p. 931.

[Mesoclanis bruneata Munro]

Munro, 1950, *J. ent. Soc. S. Afr.*, **13**: 46, Fig. 7.

CAPE: Amanzi, Uitenhage, 19.xi.1952 (*H. K. Munro*), 2 ♂, 1 ♀, sweeping over bushes of *Chrysanthemoides monilifera*, var. *angustifolia* (S. Afr. Nat. Coll. Ins.).

This locality is still more to the east than those previously recorded for the Cape Province but still more collecting is needed to connect up with the distribution in the Drakensberg area.

[Mesoclanis hyalineata Munro]

Munro, 1950, *J. ent. Soc. S. Afr.*, **13**: 50, Fig. 9.

Described on a male from Matjesfontein, Cape, in British Museum. 2 ♂ and 1 ♀ were taken at Amanzi, Uitenhage, Cape Province, 19.xi.1952 (*H. K. Munro*), sweeping over bushes of *Chrysanthemoides monolifera*, var. *angustifolia* (S. Afr. Nat. Coll. Ins.).

The female is like the male. Length and of wing, 3·5 mm., oviscape short, 0·7 mm., 0·2 wing-length, 0·7 pre-abdomen, pale pubescence on anterior blackish half and following ferruginous third, apical part blackish with black pubescence.

Male: sternite 5 widened behind where nearly three times width of anterior margin; indent shallow, concave, about 0·3 length. Tergum 9 (Fig. 173 *b*), oval, laterally widened below where rather densely pubescent, flange (Fig. 173 *c*) moderate, deeply toothed, almost spiny, but otherwise very like that of other

species; prensisetae subequal; cerci broadly rounded. Aedeagus (Fig. 173 *a*); vesica moderate, "tube" not extending beyond basal portion of aedeagus; pre-aedeagal swelling not pronounced, a dorsal group of falcate setulae and a lower group more or less in a pocket as in other species; the setulae have an almost swollen base.

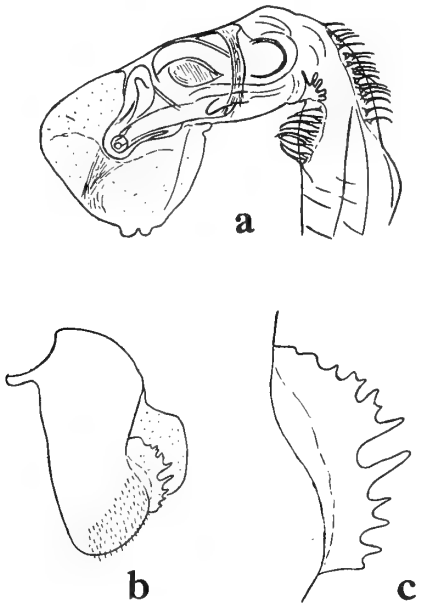

FIG. 173.—*Mesoclanis hyalineata*.
(*a*) aedeagus, (*b*) tergum 9, lateral,
(*c*) flange, greatly enlarged.

EUARESTA SERIES

EUARESTA Loew 1873

Euaresta Loew, Quisenberry, 1950, *J. New York ent. Soc.*, **58**: 9–38 (see for references).
Camaromyia Hendel, Aczél, 1949, *Acta Zool. Lilloana*, **7**: 295 (see for references).

The American genus *Euaresta* is noted here since Bezzi included some African species in *Camaromyia*, considered a synonym by Quisenberry in his careful study of the genus *Euaresta* in the United States. No African species could, at the present time, be reasonably placed in *Euraesta*. Of the species Bezzi put in *Camaromyia*, *acrophthalma* Bezzi, 1918, may be nearer the Rhabdochaetinae, and *Trypeta helva* Loew is in a new genus here.

[Euaresta bullans (Wiedemann)]

Trypeta bullans Wiedemann, 1830, *Aussereurop. zweift. Insekt*, **2**: 506.
Camaromyia bullans (Wiedemann) Aczél, 1949, *Acta Zool. Lilloana*, **7**: 295 (see for synonymy).
Euaresta bullans (Wiedemann) Quisenberry, 1950, *J. New York ent. Soc.*, **58**: 24 (see for synonymy).

The distribution of this species is curious: Europe, North and South America, and Australia. The larvae live in the burrs of *Xanthium* spp. and the spread of the fly may have been through burrs sticking to animals taken from one country to another. It is interesting to note that a specimen was taken in the Sunday's River Valley, Cape Province, South Africa, in March 1953, by Mr. C. N. Smithers.

ENSINA SERIES

As a very provisional arrangement there are included here some genera that do not belong either to *Paroxyna* s.l. series nor to *Trupanea-Tephritis*, particularly on the wing-pattern. There may be found a general resemblance to *Ensina*, with perhaps rather more similarity to *Paroxyna*. On the whole, the proboscis is "long", but the length of the labella is not easy to estimate since their appearance depends on how they happened to dry. Often appearing short and shrivelled, when neatly closed they seem long and the proboscis "hooked"; in ether-fixed specimens they may become turgid and be about as wide as long. Each genus seems to be specialised, more or less divergent and isolated, not coming in any direct line of evolution with the other groups. *Ensina* Robineau-Desvoidy (1930, *Myodaires*, p. 751) is a palaearctic genus not yet recorded from the Ethiopian region, and has an elongate head and 1 upper and 3 dark lower orbitals.

PTOSANTHUS gen. n.

Allied to *Paroxyna* s.l. but has 3 lower orbitals (occasionally 2), bare arista and a distinctive wing-pattern. Type species: *Trypeta helva* Loew.

Head short, frons flat, slight pubescence anteriorly, the foremost lower orbital and hind upper pale, ocellars moderate; antennae a little shorter than face, arista bare, only a few minute hairs on basal fourth; epistome moderately prominant; labella about 0·75 mouth-opening.

Thorax: bristles normal for *Paroxyna*, dorso-centrals at suture, 4 long scutellars, among the longer pubescence hairs across the front edge of dorsum some specimens have a middle pair developed almost as scapulars; upper squama wide, lower narrow.

Abdomen: male terminalia without marked features, aedeagus with small vesica and no pre-aedeagal setulae.

Ptosanthus helvus (Loew) comb. n.

Trypeta helva Loew, 1861, *Berl. ent. Zeit.*, **5**: 294, Taf. II, Fig. 24; 1862, *Öfv. K. Vet. Akad Förh.*, **1862**: 6. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.
Oxyna helva (Loew) Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 162.
Camaromyia helva (Loew) Bezzi, 1918, *Bull. ent. Res.*, **9**: 40; 1924, *id.* **15**: 139; 1924, *Ann. S. Afr. Mus.*, **19**: 558, Plate XV, Fig. 113; 1928, *Ann. Transv. Mus.*, **12**: 334. Munro, 1925, *Dept. Agric. S. Afr. ent. Mem.*, No. **5**: 31; 1929, *id.* No. **6**: 15.
Euribia lightfooti Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 556, Plate XV, Fig. 110 (**syn. nov.**).
Paroxyna aida Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 261, Taf. V, Fig. 22 (**syn. nov.**).
Mesoclanis (*Paroxyna*) *trifasciata* Hering, 1939, *VII. Internat. Kongr. Ent.*, **1938**: 181, Fig. 17 (syn. nov.).
Paroxyna zavattariana Hering, 1951, *Revista Biol. Coloniale*, **9**: 98, Fig. 3 (**syn. nov.**).

The type of *Trypeta helva* was collected by Wahlberg and it is very likely that it was taken in Natal in the Durban-Pietermaritzburg area.

In the *Paroxyna* s.l. series may be found a great similarity and like variation in external appearance, especially in the wing-pattern, but in spite of this species may be separated on the male terminalia, often the aedeagus, which are remarkably constant for each over a wide range. In the present species the male terminalia are constant with a marked variation in wing-pattern, but species cannot be separated on pattern variation since any range and gradation may be found together.

The pattern is reticulate with a dark spot at stigma, a dark apical area and a bar from end of marginal cell down over lower cross-vein; in the *Paroxyna* s.l. series is a median bar from stigma over lower cross-vein. The apical area and the pre-apical bar may be more or less united in the submarginal and first posterior cells. Three forms of wing-pattern are shown, but there are gradations between them. Fig. 174 is most like that of Loew, but the latter is too uniformly dark, especially in the second posterior cell. Fig. 175 is the *lightfooti* form. Hering's figure for *aida* seems to be somewhat between Figs. 174 and 175; his figure appears to be a photograph in which the dark areas are too black and the paler reticulation subdued. Fig. 176 corresponds to Hering's figure for his *trifasciata*, the apical area being almost completely separated. From the general description and remarks, it is fairly certain that *zavattariana* Hering is this same species. The figure shows a heavier wing-pattern than usual with only 2 hyaline spots in the marginal cell separated by a rather wider bar (stated to be 3 hyaline spots in the text); however, the pattern is very variable in detail, especially the spots in the marginal cell—1 East London specimen, a female, approaches the *zavattariana* pattern, having 2 larger hyaline spots and a smaller, outer one.

Bezzi recognised some specimens from East London and 1 from Eritrea as Loew's species which he placed in *Camaromyia*. Others from East London and from Barberton he named *lightfooti*; in the *Ann. S. Afr. Mus.*, **19**, 1924, his figures 110, *lightfooti*, and 113, *helva*, are not correct.

Abdomen mostly blackish, or becoming more or less yellow, or with hind

margins of tergites narrowly yellow and in a few South African specimens quite yellow as described by Loew.

Male: sternite 5 trapezoidal, posterior corners rounded, a shallow, angular indent, about 0·2 length. Tergum 9 normal, oval, no flange, cerci inturned, broadly rounded, prensisetae subequal. Aedeagus (Fig. 177); vesica small, no pre-aedeagal setulae; the figure is drawn from a well-sclerotised specimen, others were rather less sclerotised, but the various structures could be observed.

I have seen the following material:

British Museum

Kenya: Aberdare Range, Mt. Kinangop, 8000–10,000 ft., x.1934, 7 ♂; Cedar Forest, 1 ♂ on *Helichrysum* sp. "A"; above Nakuru, 9300 ft., 6.iii.1935, 1 ♂, 2 ♀ on *Helichrysum* sp. "B"; Mt. Elgon, 10,500–12,500 ft., ii.1935, 1 ♂ on flowers of *Helichrysum formossissimum*. (Kenya specimens rather larger with normal wing-pattern as Fig. 176.) Uganda: Ruwenzori, Mt. Karangora, 9900 ft., 1.ii.1935, 1 ♂, 1 ♀; Namwamba Valley, 6500 ft., 1 ♂, 1 ♀; Kigezi district, Kanaba, 7800 ft., xii.1934, 1 ♂; Mt. Muhavura, 7000 ft., on *Conyza newii* and *C. schimperi*, ssp. *longepapposa*, 2 ♂, 1 ♀. All taken by *F. W. Edwards*.

Coryndon Museum

Kenya: Naivasha, vii.1937, 2 ♂, 2 ♀ (*H. J. A. Turner*); Uplands, viii.1937, 1 ♂, 1 ♀; Nairobi, vii.1937, 4 ♂, 5 ♀ (*V. G. L. van Someren*), from flowers of Compositae.

South African National Collection of Insects

Eritrea: Asmara, 6.xii.1949, 1 ♀ (*G. De Lotto*) (a large specimen).

South Africa: Cape Peninsula: Cape Point, 19.x.1950, 1 ♀ (*C. G. C. Dickson*); Cape Flats, 16.xii.1900, 1 ♀ (det. *helva* by Bezzi); Fishhoek, iv.1927, 2 ♂, 1 ♀ (*H. K. Munro*). Cape Midlands: Robertson, 12.x.1950, 1 ♂ (*Mrs. K. M. Dickson*). East Cape: East London, 10.vi.1923, 1 ♂ (*H. K. Munro*), the male type of *lightfooti* (the female type—East London, vii.1914 (*R. M. Lightfoot*)—was in the South African Museum, Capetown, but cannot now be found); East London, iii–ix.1925, 15 ♂, 21 ♀ (*H. K. Munro*); East London, Buffalo Pass, 15.v.1947, 1 ♂ (*H. K. Munro*). Natal: Cedara, ii.1935, 4 ♂, 1 ♀, 7.xi.1936, 1 ♂, 3 ♀ (*W. E. Marriott*) (pattern normal, in 2 ♂ rather more reticulate). Transvaal: Barberton, 11.v.1914, 1 ♂ (*H. K. Munro*)—a *lightfooti* paratype; Barberton, Stentor, xi.1947, 7 ♂, 1 ♀ (*H. K. Munro*); Entabeni, Zoutpansberg, xi.1931, 1 ♀ (*G. van Son*)—the last darker wing-pattern and mainly yellow abdomen.

[Ptosanthus albinus (Bezzi) comb. n.]

Euribia albina Bezzi, 1924, *Bull. ent. Res.*, **15**: 136. Munro, 1935, *Ann. Mus. nat. Hung.*, **29**: 155, Fig. 22.

The type, a female, is in the Hungarian National Museum, and since no other specimens have been available for study, its position must remain doubtful. The wing-pattern is more similar to that of species of *Scedella*, but is not quite like any that have been placed in *Scedella* here. On the other hand, there are 3 lower orbitals which appear to be normal from a pencil sketch of the head; if the anterior one is abnormal or supernumerary, and when the male terminalia can be examined, *albinus* may prove to belong rather to the *Scedella* series.

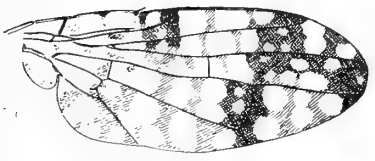

FIG. 174.

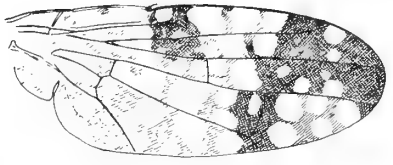

FIG. 175.

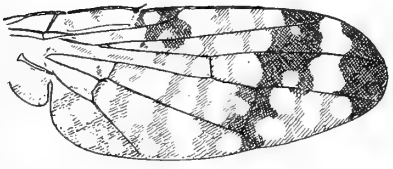

FIG. 176.

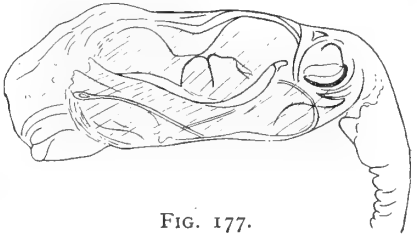

FIG. 177.

FIGS. 174–177.—*Ptosanthus helvus*, wings (see text), and aedeagus.

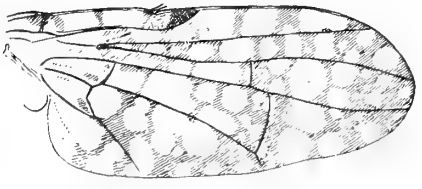

FIG. 178.—*Deroparia reticulata*.

DEROPARIA gen. n.

The occurrence of long-headed Trypetidae is curious and one of the most remarkable species is the South American *Protensina longiceps* Hendel. The South African *Euryphalara* is perhaps a *Spathulina* with a long head, the wing-pattern being alike and the abdomen shining black. The new genus differs from both in many features and probably does not belong to the *Paroxyna* s.l. series. It may come nearer *Protensina*, and even in the same group, but differs in the shape of the face and epistome, stigma and position of upper cross-vein.

Head elongate, parafacials exceptionally wide, epistome projecting well beyond antennae; 1 dark and 1 white upper orbital, 3 dark lower and a minute fourth in front; frons pubescent; lunule large; antennae shorter than face, arista pubescent.

Thorax: dorso-centrals half-way between suture and anterior supra-alars, 2 mesopleurals, 4 scutellars of about equal length (basals slightly longer); wing: stigma moderate, upper cross-vein less than half its length from lower, veins 3 and 4 convergent, 3 bare, point of anal cell acute, pattern reticulate, but the apical pattern differs in detail from that of *Paroxyna*, and it is not forked.

Abdomen plain yellow-brown, no submedian stripes or spots.

Type species: *Ensina reticulata* Munro.

[**Deroparia reticulata** (Munro) comb. n.]

Ensina reticulata Munro, 1929, *Ann. S. Afr. Mus.*, **29**: 24, Plate I, Fig. 10.
Euryphalara reticulata Munro, 1938, *Proc. R. ent. Soc. Lond.*, B. **7**: 119.

Only the male and female types from Zesfontein, South West Africa are known. Wing of male (Fig. 178).

SPHENELLA Robineau-Desvoidy

Robineau-Desvoidy, 1830, *Myodaires*, p. 773. Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 85. Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 544. Hendel, 1927, in Lindner, *Fl. Pal. Reg.* 49. *Trypetidae*, p. 169.

Head short, 2 upper (hind one white), 2 lower orbitals, 4 long scutellars. The genus is well represented in the Ethiopian region and a revision is to be undertaken.

Sphenella marginata (Fallén)

Tephritis marginata Fallén, 1920, *Dipt. Suec. Ortalid.*, **7**: 8.
Sphenella marginata (Fallén) Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 86, Plate I, Figs. 8 and 12, Plate IV, Fig. 3 (see for synonymy). Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 544, Plate XIV, Fig. 94 (further references need not be given here).

African specimens have been identified as the European species and a preliminary study of the male terminalia indicates little, if any, difference in these structures. However, much more detailed study, as well as comparison with similar forms from the East and from Australia, is needed.

Widespread in South Africa. There are several specimens collected by R. E. Turner in the Cape and in Natal.

KENYA: Aberdare Range, Mt. Kinangop, 10,000 ft., x.1934, 1 ♂, 3 ♀ (*F. W. Edwards*).

TELALETES Munro

Munro, 1938, *Proc. R. ent. Soc. Lond.*, B. **7**: 119. Hering, 1944, *Siruna Seva*, **5**: 6.

Head short; frons slightly pubescent; 2 upper (hind one pale, short and usually turned inwards), 2 lower orbitals; scapulars not developed; 4 long scutellars; wing-pattern very pale or evanescent reticulation with dark apical spot; vein 3 with a few, 4–6, wide-spaced setulae to upper cross-vein, sometimes 1 or 2 beyond. In male, tergum 9 with pair of long, downwardly directed bristles or spurs posteriorly.

Wing clear hyaline with a rather to very pale reticulation and a strong, large, black apical spot. Abdomen usually mainly yellow, pubescence yellow with sometimes a little black; rather smaller species with somewhat longer oviscape, 0·25 wing-length . . . . . *ochracea* (Loew)

Wing faintly and obscurely infuscated, no defined reticulation but rather few, small, white microtrichial spots, apical dark area less marked. Abdomen usually blackish, with mainly black pubescence; rather larger species with somewhat shorter oviscape, 0·22 wing-length . . . *obscurata* n. sp.

Telaletes ochracea (Loew)

Trypeta ochracea Loew, 1861, *Berl. ent. Zeit.*, **5**: 295, Tab. II, Fig. 25.
Acanthiophilus ochraceus (Loew) Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 559, Plate XV. Fig. 112.
Telaletes ochracea (Loew) Munro, 1938, *Proc. R. ent. Soc. Lond.*, B. **7**: 119.

KENYA: Thompson's Falls, 7500 ft., x.1940, 1 ♂, 1 ♀ (*F. W. Edwards*).

Numerous specimens in several series from East and South Africa, including Edwards's pair, have been examined and taken to be *ochracea*. There is variation in the wing-pattern (Fig. 179) and shape of the head, but further statistical studies are needed to discover whether there is any segregation and correlation in these and other characters. This will be all the more necessary since an examination of the male terminalia has revealed two forms, notably in the aedeagus. Further, both forms have been taken in one locality.

If two species are represented it is at present not possible to say which is *ochracea* for two reasons: first because the type of *ochracea* was collected by Drege in "Caffraria", and his travels extended from Namaqualand in the west,

around the southern areas of the Cape, and through the Transkei to Durban in Natal. Secondly, even if the type locality can be discovered, the problem is still difficult as the type is a female; this will require the study of authentic females and ultimately of the type. If the type has been destroyed, then a type locality may be chosen and a neotype erected.

Male terminalia: tergum 9 has the characteristic pair of posterior spurs seen in the following species, only rather longer; neither form of aedeagus shows the curious, bent "tube" seen in that of *obscurata*.

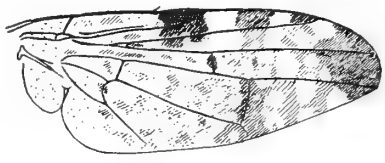

FIG. 179.—*Telaletes ochracea.*

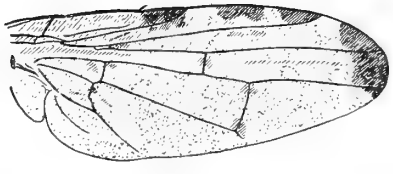

FIG. 180.

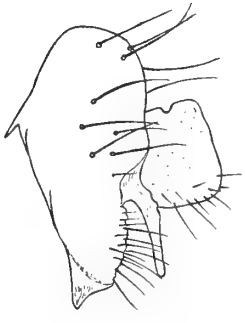

FIG. 181.

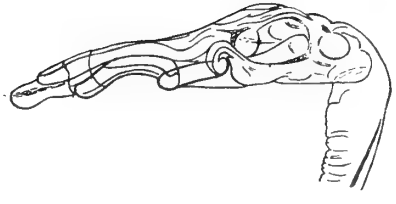

FIG. 182.

FIG. 183.

Telaletes obscurata. Fig. 180, wing; Fig. 181, tergum 9, lateral; Fig. 182, aedeagus, lateral; Fig. 183, aedeagus, dorsal.

Telaletes obscurata sp. n.

Differs from *ochracea* in the more diffuse wing-pattern and in the aedeagus.

KENYA: Mt. Elgon, Heath Zone, 10,500–11,500 ft., ii.1935, holotype ♂, allotype ♀, 7 ♂, 6 ♀ paratypes (*F. W. Edwards*) (5 specimens taken on *Senecio elongensis*); Mt. Elgon, 10,500–12,500 ft., ii.1935, 9 ♂, 2 ♀ paratypes on flowers of *Senecio rhammatophyllus*; Aberdare Range, Mt. Kinangop, 10,000 ft., 26.x.1934 (*F. W. Edwards*). UGANDA: Ruwenzori, Mt. Karangora, 9900 ft., xii.1934–i.1935, 8 ♂, 3 ♀ (*F. W. Edwards*); Imatong Mts., 10,000 ft., 2 ♂ paratypes (*D. R. Buxton*); Kigezi district, Mt. Mgahinga, 1000 ft., 22.xi.1934, 1 ♂ (poor specimen, probably this) (*F. W. Edwards*).

Length, ♂ 2·8 mm., ♀ 4·6 mm.; wing ♂ 3·8 mm., ♀ 4·5 mm.

Head yellow, frons and antennae deeper yellow, almost brown, behind black in middle, yellow below, behind eyes and vertex; frons as long as wide, 0·4 width of head, slight pale pubescence, bristles brownish black, 2 lower, 2 upper, the hind one short, paler brown and directed inwards, outer vertical and postocellar pale; antennae 0·8 face, joint 3 rounded, arista sparsely micropubescent; lunule short; parafacials narrow, about 0·2, genae as wide as third antennal joint; epistome projecting about half width of antennae; labella short.

Thorax black, humeri yellow, wing-base yellowish, dorsum: dust dense, brown, more or less golden, in some lights 3 stripes appear, pubescence moderate, pale yellow; pleura, sterna and postscutellum black with moderate grey dust, pleural dust brownish on upper third, pubescence slight, pale, fine; bristles brown, normal, no scapulars, mesopleural, pteropleural and sternopleural pale brown, dorso-centrals one-third distance to suture before anterior supra-alars; legs russet, tarsi more brownish; halteres yellow; squamae light brown, upper wide, semicircular, lower about half width of upper; wing (Fig. 180) membrane with an obscure, brownish infuscation sometimes more pronounced; darker spots above knot, below stigma, at middle and end of marginal cell and an apical spot filling end of submarginal, first posterior and tip of second posterior, and slightly over each end of lower cross-vein; stigma blackish or rather pale in middle; rest of wing with few, small, white microtrichial spots (shown more pronounced in figure) that do not form a distinct reticulation; vein 3 setose above to a little past upper cross-vein, a few setulae below.

Abdomen shining black with very slight ferruginous tinge, tip of tergite 5 in male yellow; dust slight, golden brown, grey on overlapping, slightly transparent hind margins of tergites; pubescence dark, fine, short, on tergite 2 longer and finer, appearing paler, on hind edges of tergites longer, pale shining pubescence also on sides; apical bristles in male black, in female pale. Oviscape short, wide, blackish on anterior third, ferruginous posteriorly, pubescence dark, brown-shining, 0·6 pre-abdomen, 0·2 wing-length.

Male: tergum 9 (Fig. 181) ferruginous, posteriorly oval, cerci rounded below and with a point above; at about middle of margins of posterior opening a stout spine projects downwards, there being a small patch of hairs opposite the end of the spine; no flange, but the spine may represent it; minor prensiseta about half major; the lateral aspect of the tergum is seen in the figure. Aedeagus (Fig. 182, lateral aspect; Fig. 183, dorsal, i.e. at right angles to Fig. 182); moderate sclerotisation with a conspicuous bent tube almost to apex as well as another more membranous tube.

TANAICA gen. n.

Head somewhat elongate, appearing more so as it is narrow anteriorly in both lateral and dorsal aspects, the fronto-facial angle prominent, broadly rounded; parafacials wide, about half width of third antennal joint, genae narrow but about as wide as parafacials; frons bare, 2 upper (hind one pale), 2 lower orbitals, ocellars moderate; antennae a little shorter than face, arista micropubescent; epistome projecting beyond line of parafacials a little less than width of third antennal joint; proboscis very long, projecting a third to half length of mouth-opening beyond epistome.

Thorax: dorso-centrals at suture, 4 scutellars, apicals 0·5 basals; wing hyaline, vein 3 bare; upper squamae wide, lower linear.

Abdomen shining black, slight dust and moderate, pale pubescence.

Type species: *Ensina hyalipennis* Bezzi.

[Tanaica hyalipennis (Bezzi) comb. n.**]**

Ensina hyalipennis Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 549. Munro, 1929, *op. cit.*, **29**: 26.

Described on a female from Cedarberg, Cape, in the South African Museum; only known from the south-western Cape districts. The larvae live in the seeds of *Chrysanthemoides monilifera* (Compositae); material collected in Jonkershoek, Stellenbosch, H. K. Munro.

Head: postorbital bristles usually one long, white and a row of finer, black, short setae.

Thorax: wing (Fig. 184) hyaline, only stigma light, slightly opaque yellow; veins yellowish brown, becoming darker, almost black, outwardly.

Abdomen shining black, slight grey dust, rather dense, long, whitish pubescence. Oviscape shining black, dark pubescence, 0·25 wing-length, 0·75 pre-abdomen.

Male: sternites wide, 5 with a wide, angular indent; tergum 9 rounded posteriorly, cerci inturned, short, broadly rounded, minor prensiseta about half major; aedeagus (Fig. 185); vesica membranous, voluminous, slight sclerotisation at base; moderate pre-aegeagal setulae in a band about half-way round—on lower side in figure.

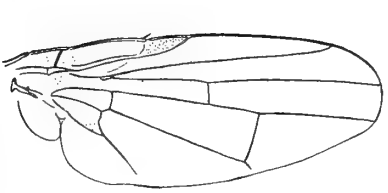

FIG. 184.—*Tanaica hyalipennis*, wing; Fig. 185, aedeagus.

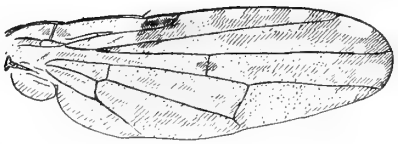

FIG. 186.

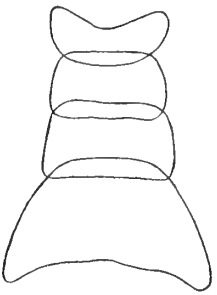

FIG. 187.

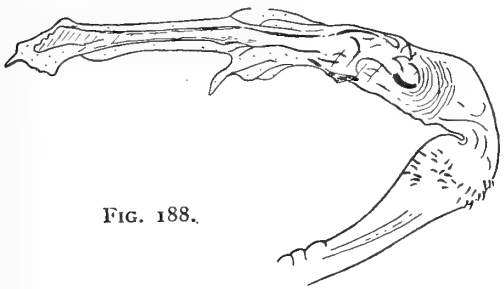

FIG. 188.

FIG. 186.—*Namwambina festinata*, wing; Fig. 187, sternites; Fig. 188, aedeagus.

NAMWAMBINA gen. n.

This genus has a superficial resemblance to *Acanthiophilus*. The bristles of the head are fine and black, only the postocellars and outer verticals yellow, but the postverticals may be black or yellow; 3 strong lower orbitals and 4 scutellars; scapulars not developed. The South American *Homoeothrix* Hering, 1944, with 3 lower orbitals, and the oriental *Homoeotricha* Hering, 1944, with 2, have the postorbitals yellow, the upper orbitals both dark. In "*Trypeta*" *péringueyi* the head bristles are all dark, the postocular row, while thin, are paler, golden brown, the other blackish; scapulars are not present and vein 3 is setose.

Head angular, but fronto-facial angle broadly rounded; eye oval; frons 0·5 width of head, 2 upper and 3 lower orbitals all dark, ocellars strong, postorbitals fine, black, 2 or 3 longer with row shorter setulae; antennae shorter than face, arista pubescent, epistome barely prominent, proboscis hooked, labella moderately elongate; genae wide.

Thorax: dorsum with moderate dust and fine black pubescence; bristles strong, black, pteropleural yellow, no scapulars, 4 long scutellars; mesopleura with suture; wing stigma elongate, third vein bare.

Abdomen: moderate dust, pubescence fine black centrally, yellow on sides; tergum 6 in female slightly longer than fifth.

Type species: *Namwambina festinata*, the following new species.

Namwambina festinata sp. n.

The relationships are indicated in the generic diagnosis.

Uganda: Ruwenzori Range, Namwamba Valley, 10,000–12,000 ft., 6–8.i.1935 (*F. W. Edwards*), holotype ♂, allotype ♀, 2 ♂, 1 ♀ paratypes.

Length, ♂ 5·5 mm., ♀ 7·0 mm.; wing, ♂ 5·7 mm., ♀ 6·6 mm.

Head brownish yellow, posteriorly brown above; length, height, width, 6:8:10; eye oval, length 0·6 height; frons in profile prominent, the fronto-facial angle rounded; flat, yellow, bare or a very slight trace black pubescence anteriorly; width 0·5 head, and about 1·1 length; ocellar dot black; lunule moderate, wide; antennae 0·75 face, brown, arista brown, pubescent; face yellow or darker with silvery sheen, rather concave, epistome barely prominent, parafacials about 0·25 width of third antennal joint, genae wide, 0·14 height of head; proboscis elongate, labella 0·8 length of oral opening; bristles as indicated, the postverticals may be both yellow or both black, or one black, one yellow.

Thorax: dorsum, dust moderate, grey with 3 brown stripes, moderate brown on sides continued broadly around scutelum; thorax in general brown with blackish tinge, blacker below, postscutellum black with grey dust; pubescence fine, black, on pleura pale yellow on upper half of mesopleura, black on lower; yellow and longer on sterna; bristles strong, long, black, pteropleural yellow, no scapulars, apical scutellars 0·7 basals, dorso-centrals about half-way between anterior supra-alars and suture; legs normal, brownish yellow, femora more or less blackened; halteres yellow; wing (Fig. 186) elongate, about three times as long as wide, vein 3 bare, stigma elongate, pattern a pale, light-brownish, washed-out reticulation, the wing surface grey due to dense, dark microtrichiae with some white microtrichial spots appearing subhyaline and more apparent obliquely, the membrane dark brown at stigma and below, more or less light brown along costa and at ends of lower cross-vein.

Abdomen blackish, dust brown on median third (where pubescence fine, black), but tending to form submedian dark spots—smaller and more marked

in male—with median grey-dusted stripe and grey on sides where pubescence pale, coarser and longer; hind edges of tergites yellowish, 6 in female, mainly yellow and a little longer than 5; 5 in male ferruginous at end; apical bristles black. Oviscape ferruginous, black at ends, fine black pubescence, median portion of ovipositor and aculeus reddish ferruginous, the latter stout and sharply pointed.

Male: tergum 9 normal, cerci inturned, rounded, minor prensiseta about half major; aedeagus (Fig. 188) elongate, capsule moderately sclerotised with long tube to apex of reduced vesica; moderate pre-aedeagal swelling with some setulae dorsal and some lateral (below in figure). Sternites (Fig. 187); 5 large and wide with shallow indent.

ACANTHIOPHILUS SERIES

Included here are species that have 3 dark lower orbitals, 2 upper, the hind one pale, and 4 scutellars; lower squama large; wing-pattern reduced or to a more complete *Trupanea*-like with apical fork, or reticulate, or subreticulate, occasionally absent; general body coloration grey, or brownish or bluish without stripes or spots.

Hendel, 1927, erected *Tephritomyia* as a subgenus of *Acanthiophilus*, but the characters he used are not satisfactory. The difference in the appearance of the proboscis is illusory since in *lauta*, as in some other species, e.g. of *Sphenella*, the labella are of medium length and when neatly closed cause the proboscis to appear hooked, but when more or less turgid, pestle-like. The pointed third antennal joint seems rather specific than generic; in *helianthi* there is in most specimens a distinct point, as may be the case in *walkeri*—unfortunately available specimens have lost the antennae. Other species placed here in *Acanthiophilus* have the joint rounded at end. A study of the genotypes, *walkeri* and *lauta*, reveals combinations of characters that justify two genera, *Acanthiophilus* and *Tephritomyia*. A third genus is needed for a species that has similar common characters, but their combination excludes it from either of the other two. The genera may be distinguished thus:

Apical scutellar bristles short, half or less than half basals; wing-pattern a reduced *Trupanea*-type, much reduced, or, when more extensive, an apical fork somewhat developed (Figs. 189–193); aedeagus (Figs. 194–197); moderate vesica with a stout, basal, curved spine and a conspicuous, setulose "rod" . . . . . *Acanthiophilus*

Apical scutellars long, 0·8 basals or longer; wing-pattern decidedly reticulate or subreticulate, with dark microtrichiae and white spots, no pattern in one species; aedeagus (Figs. 203–206); vesica relatively enormous, membranous and plicate with at most a small, stout spine at base . *Tephritomyia*

Apical scutellars short, about half basals; wing-pattern a complete *Trupanea*-type; aedeagus large and voluminous without spines . . *Pherothrinax*

Various non-Ethiopian species that have been placed in *Acanthiophilus* will need more detailed study before they can be said to be definitely congeneric with either *walkeri* or *lauta*. Most of the earlier African species do not belong: *helianthoides* Bezzi, *semisphenella* Bezzi, *hessii* Munro, go to *Sphenella*; *ochracea* has been placed in *Telaletes*, while *muiri* and *hemimelas* need a new genus. Certain later species described by Hering are difficult to place owing to lack of data and of specimens; *caliginosus* may belong to *Tephritomyia*; on the other hand, if others, *coarctatus*, *köhleri*, *melanoxanthus* and *trypaneodes* with a more complete *Trupanea* pattern, prove to have male terminalia similar to *redimitis* sp. n., they could be included in the new genus *Pherothrinax* and help to stabilise it.

Apart from these, various species with 3 lower orbitals and 4 scutellars placed by Bezzi, 1924, in *Trupanea* (*Trypanea*) do not belong here.

ACANTHIOPHILUS Becker

Becker, 1908, *Mitt. zool. Mus. Berl.*, **4**: 136. Hendel, 1914, *Wien. ent. Zeit.*, **33**: 98 note 18; 1917, in Lindner, *Fl. Pal. Reg.*, 49, *Trypeditae*, p. 202. Bezzi, 1918, *Bull. ent. Res.*, **9**: 41; 1924, *id.* **15**: 139; 1924, *Ann. S. Afr. Mus.*, **19**: 558; 1926, *Bol. Lab. Zool. Portici*, **18**: 295.

Hendel's was the first attempt to stabilise *Acanthiophilus*, but the characters used to separate *Tephritomyia* are unsatisfactory, as has been noted.

Of the characters already given, none alone can be said to be decisive, except perhaps the aedeagus, but in combination they appear to be so; a close study of non-African species that have been placed in the genus would thus be of interest. The 3 generic characters are of relatively little value in separating species; the remarkable similarity in the aedeagi is striking, as is the difference from what is seen in *Tephritomyia*, but, curiously, there is a resemblance to the aedeagus in *Trupanea*. The wing-pattern in *helianthi* is variable, not observed to be so in the others apart from minor variation. In the male there are specific differences in the sternites 4 and 5 (Fig. 198); in *ciconia* the oviscape is 1·5 times the length of the pre-abdomen, in the others, as long or a little shorter.

[Acanthiophilus walkeri (Wollaston)]

Tetanocera walkeri Wollaston, 1858, *Ann. Mag. nat. Hist.*, Ser. III, **1**: 116, Plate V, Fig. 6.

Tephritis walkeri (Wollaston) Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 141.

Acanthiophilus walkeri (Wollaston) Becker, 1908, *Mitt. zool. Mus. Berl.*, **4**: 137 and 200. Bezzi, 1926, *Bol. Lab. Zool. Portici*, **18**: 296. Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 205, Taf. 16, Fig. 7.

Only known from the Canary Islands and Madeira. I am indebted to Senor José Ma. Fernàndez, Santa Cruz de Tenerife, for 2 males that have been of the greatest value in this study. The wing-pattern (Fig. 189) is distinctive,

a reduced *Trupanea* type extended well to the base and the apical fork weak; there is slight individual variation. Apical scutellars 0·5 basals.

Male: sternites (Fig. 198 *a*); 5 slightly wider than 4 and with a deep, wide indent; aedeagus (Fig. 194); vesica moderate, a strong, basal, curved spine and a setose rod.

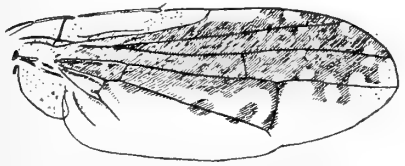

FIG. 189.—*walkeri.*

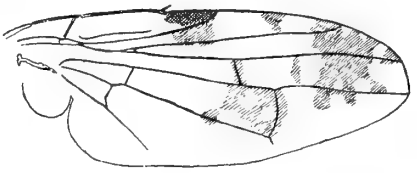

FIG. 190.—*brunneus.*

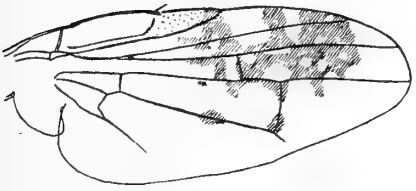

FIG. 191.—*helianthi*, var.

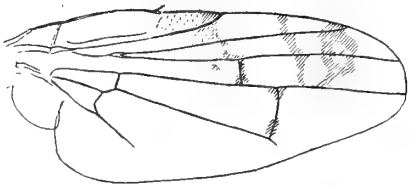

FIG. 192.—*helianthi*, var.

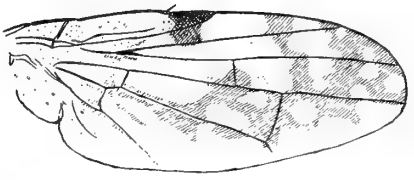

FIG. 193.—*ciconia.*

Acanthiophilus spp. wings.

[Acanthiophilus helianthi (Rossi)]

Musca helianthi Rossi, 1794, *Fauna Etrusca: Mant. Ins.*, II: 73 (*sec* Sherborne).
Acinia helianthi (Rossi) Macquart, 1848, *Luc. Explor. Alg., Zoo.*, **3**: 497.
Trypeta helianthi (Rossi) Frauenfeld, 1856, *Sitzgsbr. Ak. Wien.*, **22**: 556. Loew, 1861, *Berl. ent. Zeit.*, **5**: 256.
Urellia helianthi (Rossi) Becker, 1905, *Kat. Pal. Dipt.*, **3**: 142. Bezzi, 1908, *Boll. Soc. ent. Ital.*, **39**: 142, 162.
Acanthiophilus helianthi (Rossi) Bezzi, 1918, *Bull. ent. Res.*, **9**: 41; 1924, *id.* **15**: 139; 1926, *Bol. Lab. Zool. Portici*, **18**: 295. Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 203, Taf. 16, Fig. 8. Séguy, 1930, *Mém. Soc. Sci. nat. Maroc.*, **24**: 177; 1932, *Enc. Ent. Dipt.*, **6**: 174; 1934, *Faune de France*, **28**: 168, Plate XVI, Fig. 187; 1949, *Rev. Française d'Ent.*, **16**: 157. Stackelberg, 1932, *Bull. Plant Prot*

Leningd., Ser. I, *Ent.* No. **5**: 166. Hering, 1935–1936, *Bull. ent. Pologne*, **14–15**: 112; 1936, *Bull. Soc. Sci. Acad. Roumaine*, **18**: 6. Zia, 1937, *Sinensia*, **8**: 215, Plate VII, Fig. 65. Chen, 1938, *Sinensia*, **9**: 162.

Trypeta eluta Meigen, 1826, *Syst. Beschr.*, **5**: 344, Taf. L, Fig. 13. Loew, 1844, *Germ. Zeit.*, **5**: 416, Taf. II, Fig. 67. Kaltenbach, 1872, *Pflanzenf.*, 386.

Acinia eluta (Meigen) Macquart, 1835, *Suit. a Buff.*, II, 472. Dufour, 1849, *Ann. Soc. ent. France*, II. sér. 49. Frauenfeld, 1856, *Sitzgbr. d. K. Ak. Wiss.*, **22**: 544; 1863, *Verh. z. b. Ges. Wien.*, **13**: 218. Schiner, 1858, *Verh. z. b. Ges. Wien.*, **8**: 674; 1864, *Fauna Austr.*, **2**: 171. Loew, 1862, *Monogr. Tryp.*, 117, Taf. XXIV, Fig. 3. Fr. Low., 1866, *Verh. z. b. Ges. Wien.*, **16**: 949. Kaltenbach, 1872, *Pflanzenf.*, 386. Bradley, 1901, *Ent. mon. Mag.*, **37**: 9. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 133; 1905, *Kat. Pal. Dipt.*, **3**: 142; 1907, *Reit. Hym. Dipt.*, **5**: 390; 1908, *Mitt. zool. Mus. Berl.*, **4**: 140. Dale, 1904, *Ent. mon. Mag.*, **40**: 212. Andrews, 1934, *Ent. Rec.*, **46**: 125.

Trypanea eluta (Meigen) Becker, 1912, *Annuair. d. Mus. Zool. Ac. Imp. Sci. St. Petersbg.*, **17**: 644. Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 117, Plate V, Fig. 2.

A remarkable species that ranges from England and the Canary Islands across South Europe and North Africa (from Morocco to Sudan and Eritrea), Asia Minor and India to Central Asia. It is here recorded from Kenya.

Frons bare with trace of a median stripe. Wing-pattern (Figs. 191–192) is reduced and variable, occasionally almost absent; Eritrea specimens have mostly the more extended pattern, Kenya specimens the more reduced. Apical scutellar bristles about 0·375–0·4 basals.

Male: sternites (Fig. 198 *b*) 4 wider than 5, which has a shallow indent and a distinctive, narrow median ridge on the inner side, a slight ridge may appear on 4. Aedeagus (Fig. 195); vesica moderate, a large basal curved spine and a moderate setose rod. The main figure shown is from an Indian specimen; in this the setulae on the rod are short, while, as in the small figures, in another Indian (left) and in an African (right) specimen, the setulae are longer but very variable.

Acanthiophilus brunneus Munro

Munro, 1934, *Amer. Mus. Nov.*, **739**: 4.

A brownish species described from Abyssinia and the Congo.

KENYA: Aberdare Range, Mt. Kinangop, 8000, 9000 and 10,000 ft., x–xi. 1934, 25 ♂, 10 ♀ (including 1 ♂, 1 ♀, Cedar Forest; 1 ♂ 1 ♀ on *Conyza* sp.; 8 ♂ on *Lobelia aberdarica*); Mt. Elgon, 10,500–12,500 ft., ii.1935, 1 ♀ on *Carduus keniensis*. UGANDA: Kigezi district, Mt. Sabinio, 8000 ft., xi.1934, 3 ♂ (all *F. W. Edwards*).

Arista pubescent; frons bare, third antennal joint rounded at end, occasionally a tendency to a point. Wing-pattern (Fig. 190) reduced, variable, with slight apical fork, veins yellowish, dark on dark areas. Apical scutellar bristles 0·375 basals.

Male: sternites (Fig. 198 *d*), 4 wider than 5, which has a rather deep, concave indent. Aedeagus (Fig. 197); vesica moderate with large curved basal spine and long setulose rod.

Female: oviscape a little shorter than pre-abdomen.

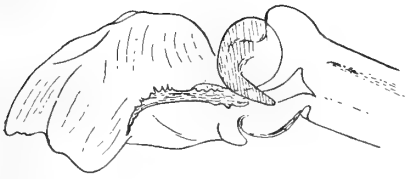

FIG. 194.—*walkeri*.

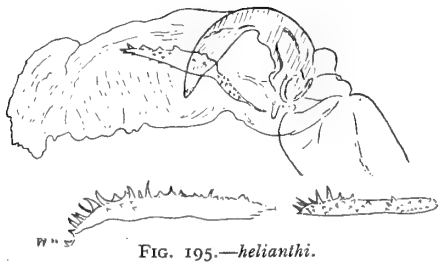

FIG. 195.—*helianthi*.

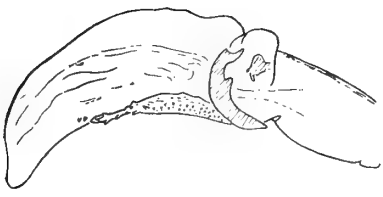

FIG. 196.—*ciconia*.

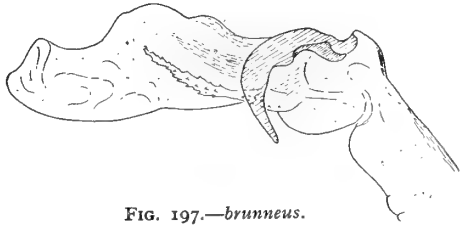

FIG. 197.—*brunneus*.

Acanthiophilus spp., aedeagi.

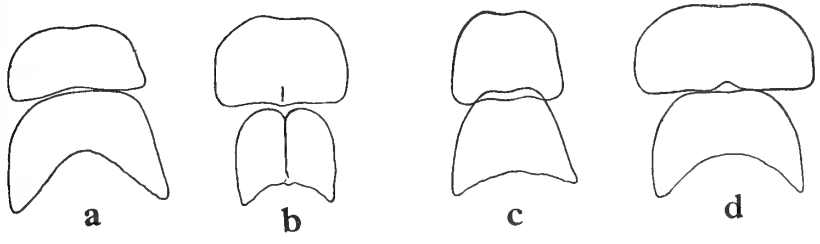

FIG. 198.—*Acanthiophilus* spp., sternites 4 and 5.
(a) *walkeri*, (b) *helianthi*, (c) *ciconia*, (d) *brunneus*.

Acanthiophilus ciconia sp. n.

The species may be recognised by the wing-pattern and the very long oviscape.

KENYA: Aberdare Range, Mt. Kinangop, 10,000 ft., 26.x.1934, holotype ♂, allotype ♀, 5 ♂, 9 ♀ paratypes (*F. W. Edwards*) (2 ♀ on *Carduus keniensis*); Mt. Elgon, Heath Zone, 10,000–14,000 ft., 1 ♂ paratype; 1 ♀ paratype on *Carduus nanus* (*F. W. Edwards*). UGANDA: 6.v.1932, 3 ♂, 1 ♀ paratypes (*E. G. Gibbins*).

Length, ♂ 6·0 mm., ♀ 10·25 mm.; wing, ♂ 5·8 mm., ♀ 6·0 mm.

Head yellow, angular, fronto-facial angle prominent; length, height, width, 6:7·3:10; posteriorly black medially to a little over tentorial sutures, beard moderate yellow hairs, postoculars yellow, postorbitals 8 close-set bristles with a few yellow setae; frons flat, bare, light ferruginous, slight grey dust, greyer on sides and behind and a just perceptible median stripe, ocellar dot black; bristles blackish, 2 upper orbitals (hind one yellow), 3 lower (or 1 or 2 supernumeraries on one or both sides, the lowest of which may be paler) ocellars strong; as long as wide and 0·5 width of head; lunule wide U-shaped, about three times wider than long; antennae 0·75 face, third joint brownish, rounded at end, but may appear pointed if the joint has collapsed, arista micropubescent; face concave, epistome projecting about 0·5, parafacials 0·5, gena 1·4 width of third antennal joint; falcella strongly developed; proboscis yellow, labella about 0·5 length of mouth cavity, palpi deep yellow, a little shorter than lavella.

Thorax black, humeri yellow with a bunch of long yellow pubescence; dorsum: dust light brown, pubescence white, short, longer before scutellum, pleura as dorsum, postscutellar area black, brownish dust; bristles black, dorsocentrals just behind suture, hind notopleural white. Scutellum very slightly convex, brown dust and some pubescence; length 0·6 width, 4 bristles, apicals 0·5 basals; legs tawny, front femora a row of bristles below, hind with a small pre-apical bristle above; wing (Fig. 193) a broken *Trupanea* pattern, variable in detail, it extends from the apex across discal cell to anal and recalls somewhat that seen in some species of the *Paroxyna* series (*gladiatrix*, Fig. 55; *saltoria*, Fig. 89, and *sigillata*, Fig. 90); stigma black, costal bristle small, vein 3 bare.

Abdomen black-shining, moderate grey dust, middle of tergite 6 in female polished, pubescence rather sparse, while, longer on sides and at end, apical bristles black; in female tergite 6 1·6 length of 5; oviscape very long, 5·0 mm., 0·7 wing, 1·5 pre-abdomen, acuminate, black-shining, sparse, rather long black pubescence, mid-joint black, ferruginous on sides, aculeus blackish ferruginous; venter black, moderate grey dust.

Male: sternites (Fig. 198 *c*) 4 and 5 of about equal width, 5 with shallow indent; aedeagus (Fig. 196), vesica moderate, with strong, curved spine and setulose rod.

TEPHRITOMYIA Hendel

Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 202.

Described as a subgenus of *Acanthiophilus* from which differences have already been noted. Species placed here may be recognised by the long apical scutellar bristles, the decidedly reticulate wing-pattern (none in *sericeus* sp. nov.) and the remarkable voluminous and elongate vesica.

The four species studied may be distinguished from one another on the

wing-pattern (Figs. 199–203); the figures for *lauta* and *xiphias* are shown darker than is actually the case; *xiphias* and *griseus* have black microtrichiae over most of the wing with white spots. The membranous aedeagi (Figs. 203–206) appear to have a complicated internal structure and are finely cross-ribbed externally. In the preparations they are more or less shrivelled but may at times become turgid and extended; that of *xiphias* is exceptionally long, but otherwise they do not show any striking differences except for a short, small spine at the base, in *griseus* it is spiny, in *xiphias* smooth, in *sericeus* smooth and curved, and apparently absent in *lauta*. Sternites 4 and 5 (Fig. 207) show no obvious specific differences.

Hering's *caliginosus* may belong here; the wing-pattern seems to be reticulate and rather like that of *lauta* and the apical scutellars are long.

[Tephritomyia lauta (Loew)]

Oxyna lauta Loew, 1869, *Zeit., f. d. Ges. Naturw.*, **34**: 18.
Euribia (*Tephritis*) *lauta* (Loew) Hendel, 1914, *Wien. ent. Zeit.*, **33**: 98, note 18.
Tephritis lauta (Loew), Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 103, Plate V, Fig. 7, Plate I, Fig. 11.
Acanthiophilus (*Tephritomyia*) *lauta* (Loew) Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 203, Taf. 16, Fig. 9.
Acanthiophilus lauta (Loew) Séguy, 1930, *Mém. Soc. Sci. nat. Maroc.*, **24**: 177.
Tephritis veliformis Becker, 1907, *Zeit. Hym. Dipt.*, p. 388; 1913, *Ann. Mus. Z. St. Petersbg.*, p. 645. Hendel, 1914, *Wien. ent. Zeit.*, **33**: 98, note 18.
(Genus ?) *velifera* Bezzi, 1909 (*sec* Hendel, 1937).

According to Efflatoun originally only from the Island of Rhodes in the Aegean, but later recorded from Morocco, Egypt, Asia Minor and Persia.

The wing (Fig. 199) has a distinctive, somewhat scattered, reticulate pattern; it is shown rather too pronounced in the figure as it seems to be usually darker along the cells, paler either side along the veins. Apical scutellars 0·9 basals. Oviscape about as long as pre-abdomen.

Male: sternites (Fig. 207 *a*) 4 and 5 of about same width, 5 longer and hardly any indent. Aedeagus (Fig. 203); vesica elongate, voluminous, at most slightly sclerotised at base.

[Tephritomyia grisea (Munro) comb. n.]

Acanthiophilus griseus Munro, 1934, *Amer. Mus. Nov.*, **739**: 4. Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 264.

Described on a female from Addis Ababa, there are in the Pretoria collection some specimens from KENYA: Kipkabus, 8200 ft., ix.1952 (*W. H. Ghent*), and Londani, xi.1937 (*V. G. L. van Someren*) (per Coryndon Museum). Both lots reared from flowers of Compositae.

Male like female; length and of wing, 6·0 mm. or smaller. Third antennal joint rounded at end, arista sparsely micropubescent; frons a little pale brown

pubescence anteriorly, and a wide but not strong silvery median stripe. There may be 2 dark mesopleurals. Wing (Fig. 200) veins brownish, a rather strong black microtrichial pattern with darker brown infuscation on stigma, costal spots and over upper and lower cross-veins; 1–3 setulae at knot on vein 3. Apical scutellars 0·84 basals. Oviscape with white pubescence on anterior third, black behind.

Male: sternites (Fig. 207 *b*) 5 slightly wider than 4, and with slight indent. Aedeagus (Fig. 204); vesica long and voluminous, at base a tiny spine that is spinulose.

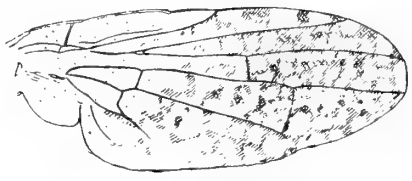

FIG. 199.—*lauta*.

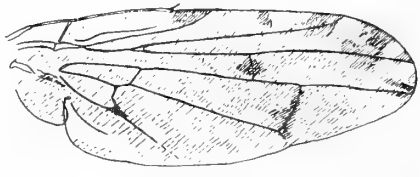

FIG. 200.—*grisea*.

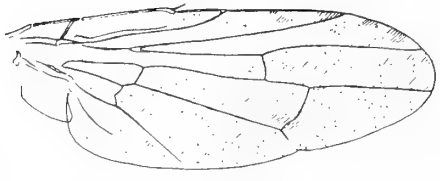

FIG. 201.—*xiphias*.

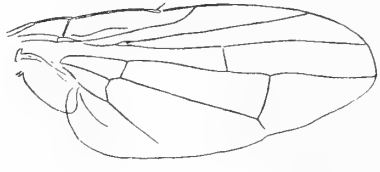

FIG. 202.—*sericea*.

Tephritomyia spp., wings.

[Tephritomyia xiphias (Bezzi) comb. n.]

Euribia xiphias Bezzi, 1924, *Bull. ent. Res.*, **15**: 138. Munro, 1935, *Ann. Mus. nat. Hung.*, **29**: 154, Fig. 21. Described from Abyssinia.

KENYA: Kipkabus, ix.1952 (*W. H. Ghent*) (Pretoria collection). UGANDA: Kigezi, ii.1928 (*G. D. H. Carpenter*) (Commonwealth Institute of Entomology).

The type in the Hungarian National Museum is a female. A large species. Male like female; length 8·0 mm.; wing 7·7 mm. Frons slight pubescence anteriorly, a moderate median silvery stripe which may be polished down its middle; third antennal joint rounded at end; arista very minutely pubescent. One mesopleural bristle, or a second pale one; apical scutellars 0·8–0·9 basals. Wing (Fig. 201) a very faint, black microtrichial pattern shown darker in figure; veins yellow, stigma deeper yellow, membrane slightly yellowish with slightly stronger, brownish infuscation on outer third, where white microtrichial spots more marked, some darker spots on costa and lower cross-vein; no to 4 setulae at knot on third vein.

FIG. 203.—*lauta*.

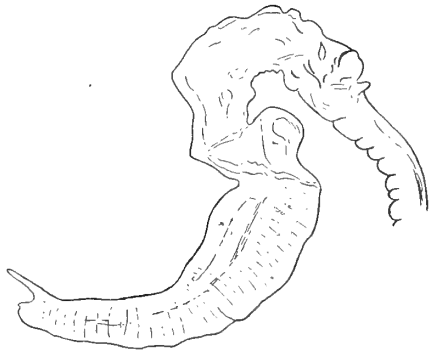

FIG. 204.—*grisea*.

FIG. 205.—*xiphias*.

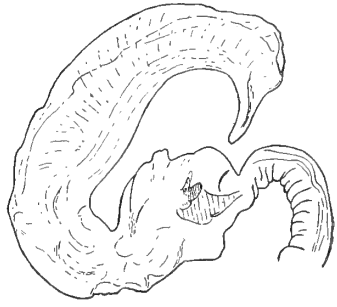

FIG. 206.—*sericea*.

Tephritomyia spp., aedeagi.

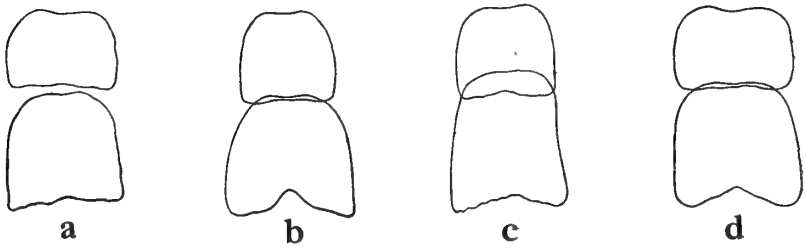

FIG. 207.—*Tephritomyia* spp., tergites 4 and 5.
(a) *lauta*, (b) *grisea*, (c) *xiphias*, (d) *sericea*.

Female: oviscape very long, 4·5 mm., a little more than half wing-length, 1·6 pre-abdomen.

Male: sternites (Fig. 207 *c*) long and narrow, 5 with slight indent. Aedeagus (Fig. 205); vesica extremely long, a stout, short, pointed, smooth spine at base.

[Tephritomyia sericea sp. n.**]**

No pattern nor any other mark on the wing.

W. Darfur, holotype ♂, allotype ♀, 10 ♂, 7 ♀ paratypes, N. Jebel Murra, Deriba Lakes, 8000 ft., 15–17.vi.1932; 6 ♀ paratypes, Jebel Murra, Killing, 7000 ft., 7.iv.1932 (*M. Steele*). The locality has been given as stated on the labels; it seems to be the apparently isolated mountain, Jebel Marra, Dar Fur, at the western side of the Egyptian Sudan. The collector is Miss M. Steele.

Length, ♂ 5·5 mm., ♀ 5·7 mm.; wing, ♂ 4·9 mm., ♀ 4·7 mm.

Head yellow, fronto-facial angle wide; length, height, width, 6·5:8:10; eye, length 0·6 height, posteriorly a pair of moderate, black spots on either side of occiput, beard short, sparse, pale yellow, postocular row yellow, postorbitals with a few yellow setae; frons flat, prominent anteriorly, yellow, width at vertex 0·9 length, 0·4 width of head, a little yellow pubescence anteriorly and a slight median stripe, bristles brown, hind upper orbital white, 3 lower, ocellars strong; lunule, yellow, wide, length 0·5 width; antennae yellow, 0·8 face, joint 3 brown, rounded at end, arista micropubescent, base brown, flagellum black; face: epistome slightly projecting, in some specimens the lower middle part of the face is prominent, parafacials narrow about 0·2 and genae as wide as third antennal joint, bristle tawny; proboscis hooked or pestle-like, depending on condition; palpi yellow, setae black at tip.

Thorax black, dorsum: dust grey, dense, rather less on pleura and still less on postscutelum; pubescence pale shining, yellow; bristles light brown, hind notopleural yellowish, dorso-centrals at suture; halteres yellow; squamae yellow, both ear-like, lower wider; scutellum flat, yellow, slightly black on disc, 4 bristles, apicals 0·9 basals; coarse yellow pubescence on disc; legs yellowish brown, almost ferruginous; wing (Fig. 202), no pattern nor any mark, veins yellow, membrane very pale yellow subhyaline, the pale microtrichiae giving a silky sheen, stigma slightly yellowish, vein 3 bare.

Abdomen black, slightly ferruginous at base and hind edges of tergites narrowly ferruginous, the last rather wider, grey dust slight to moderate, the abdomen appearing black, pubescence rather dense, long, coarse, pale shining yellow, leaving a moderate median stripe free of pubescence, apical bristles brown, moderate. Oviscape black, pubescence as on pre-abdomen, flat in specimens; length 1·2–1·25 mm., 0·6 pre-abdomen, 0·25 wing.

Male: sternites 4 and 5 (Fig. 207 *d*), indent of 5 shallow; aedeagus (Fig. 206); vesica long and voluminous, a very small, curved spine at base.

[Tephritomyia caliginosa (Hering) comb. n.]

Acanthiophilus caliginosus Hering, 1942, *Siruna Seva*, **4**: 13, Abb. 10.

Described on a female from S. Kamerun.

The more reticulate wing-pattern and the long apical scutellar bristles seem to warrant inclusion here.

PHEROTHRINAX gen. n.

Like *Acanthiophilus* and *Tephritomyia*, having characters in common; it agrees overall with *Acanthiophilus*, but with the combination of short apical scutellar bristles, well-developed *Trupanea* pattern and voluminous membranous vesica it is excluded from both the other two genera.

Type species: *Pherothrinax redimitis*, the following new species.

Certain other species may belong here, but there is not enough data, nor are specimens available, to make sure of their correct position. They are:

Acanthiophilus coarctatus Hering, 1942, *Siruna Seva*, **4**: 14, Abb. 11.
Acanthiophilus köhleri Hering, 1940, *Stett. ent. Zeit.*, **101**: 31, Fig. 6.
Acanthiophilus melanoxanthus Hering, 1938, *Deut. ent. Zeit.*, **1938**: 407, Abb. 5.
Acanthiophilus trypaneodes Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 263, Taf. V, Fig. 19.

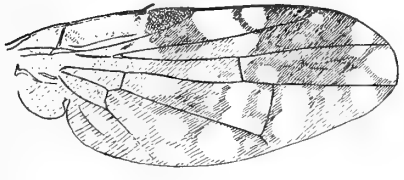

FIG. 208.

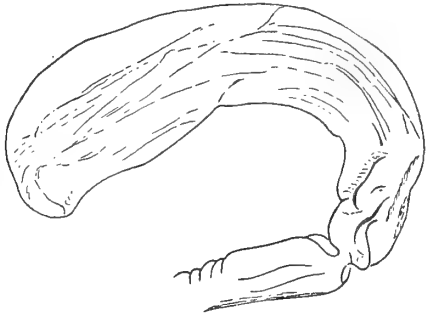

FIG. 209.

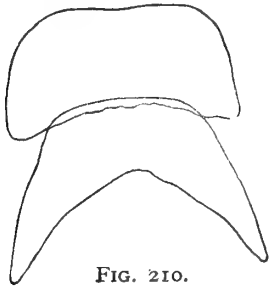

FIG. 210.

Pherothrinax redimitis. Fig. 208, wing. Fig. 209, aedeagus.

Fig. 210, sternites 4 and 5.

Pherothrinax redimitis sp. n.

KENYA: Mt. Elgon, 10,500–12,500 ft., ii.1935, holotype ♂, allotype ♀, and 6 ♂, 1 ♀ paratypes (*F. W. Edwards*). Some taken on *Erlangia* sp.

Length, ♂ 4·7 mm., ♀ 6·0 mm.; wing, ♂ 4·8 mm., ♀ 5·1 mm.

Head yellowish brown, a bilobed black area behind; length, height, width, 6:7·5:10; fronto-facial angle moderate, beard rather sparse, short, yellow; frons flat, deep yellow, broadly silvery on sides and a fairly well-marked median stripe, as long as wide, 0·5 width of head, some rather long, pale pubescence before lunule, bristles brown, hind upper ortibal yellow, 3 lower, sometimes an additional small, pale one in front, rarely 2 and a small pale one, ocellars strong; lunule wide U-shaped, width twice length, silvery dusted; antennae 0·9 face, third joint yellow or blackish, rounded at end, arista micropubescent; face: epistome slightly prominent, about 0·3 width of antennae, parafacials about 0·5 genae 1·1 antennae, bristle brown; proboscis: labella apparently short, not clear in specimens, palpi yellow with black setae at end.

Thorax black; dorsum, dust dense, brown, in some lights paler stripes appear, the median one in particular free of the pale pubescence; pleura with brown dust and white pubescence, postscutellar area black, with brown dust; bristles brown, dorso-centrals at suture, hind notopleural and pteropleural yellow; halteres yellow; squamae yellow, both ear-like, but the lower somewhat the narrower; scutellum flat, brown dust and a little white pubescence, 4 bristles, apicals 0·45–0·5 basals; legs tawny, femora slightly blackened, wing-pattern (Fig. 208) *Trupanea*-like, especially above vein 4, below this irregular and variable, rays not well defined and broadly united around margin of wing, vein 3 bare.

Abdomen black, shining, moderate brown dust dense, margins of tergites 3–6 very narrowly yellow, pubescence shining yellow, somewhat sparse, longer posteriorly, apical bristles brown. Oviscape shining black, slightly ferruginous in middle, black pubescence longer and paler at base; length 1·6 mm., 0·8 pre-abdomen, 0·3 wing. Venter blackish, pale pubescence.

Male: sternites (Fig. 210) wide, 5 with wide, deep indent, the posterior corners narrow and acute. Aedeagus (Fig. 209); vesica moderate, voluminous, a little sclerotised at base.

EUARESTELLA SERIES

EUARESTELLA Hendel

Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 174. Hering, 1942, *Siruna Seva*, **4**: 9.

See notes under following genus. Genotype: *megacephala* Loew. Hendel included *iphionae* Efflatoun, but this may better be located in *Urelliosoma*.

[Euarestella megacephala (Loew)]

Trypeta megacephala Loew, 1846, *Linn. Ent.*, **1**: 512, Tab. III, Fig. 18.
Tephritis megacephala Loew, 1862, *Die europ. Bohrfl.*, p. 116.
Euaresta megacephala (Loew) Bezzi, 1920, *Bull. ent. Res.*, **10**: 260.
Euarestella megacephala (Loew) Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 174, Text Fig. 70, Taf. 12, Fig. 8.

Only known from Sicily.

[Euarestella abyssinica Hering]

Hering, 1937, *Mitt. zool. Mus. Berl.*, **22**: 260, Taf. V, Fig. 14.

MIGMELLA gen. n.

Relatively large, *Trupanea*-like species, generally densely blue-dusted.

Head angular, frons very wide (to 0·6 width of head), flat, bare, prominent anteriorly, 2 upper (hind white) orbitals, 2 lower with often a small, white, third in front; lunule short; antenna normal, arista short pubescent; proboscis: labella moderately long, but appearance differs according to way they have dried.

Thorax: dorso-centrals at suture, 2 scutellars; wing, elongate *Trupanea* pattern with apical fork; lower squama narrow; scutellum about equilateral triangular, sometimes shorter.

Abdomen: dust slight to moderate; oviscape long to short, pubescence black or a little white at base.

Male: sternites, 5 with a deep, angular indent; tergum 9 with moderate, rounded flanges on either side of posterior opening appearing as a pair of spines in dorso-posterior view; aedeagus moderately long, sclerotised capsule and small vesica, no marked pre-aedeagal swelling, but some very fine, short hairs dorsally and on one side, below in figures.

Type species: *Trypeta planifrons* Loew.

It is to be regretted that no specimen of the genotype of *Euarestella* is available, and it is thus necessary to rely on descriptions. A comparison between it and the new genus is shown in the following table. That the two are very much alike is evident, and it is largely on a balance of various relatively small character differences that a separation is possible; the shape of the head and that *Euarestella* has apparently normally 3 lower orbitals, while *Migmella* has 2, may be significant. It may be that *megacephala* is an isolated species of the more numerous Ethiopian group.

Under *Euarestella*, the references marked "(Lw.)" are from Loew's description of *megacephala*; others are from Hendel's diagnosis of the genus.

	Euarestella (*megacephala*)	*Migmella* (*planifrons*)
head	sehr grosse (Lw.) relativ gross	not swollen, frons flat and fronto-facial angle angular
eye	Augen gross und ziemlich länglich (Lw.) lotrecht oval	rounded
frons	pubescent	bare
lower orbitals	drei fahle Borsten (Lw.) 4, vorderste oft kleiner, heller	2, at times a small, evanescent third in front
lunule	Lunula gross, schildförmig vorstehend	moderate
proboscis (labella)	Rüssel kurz und dick (Lw.) Rüssellabellen so lang wie breit oder nur wenig länger, nicht als "hakig" zu bezeichnen	labella short, of moderate length, proboscis appearing hooked when labella neatly closed or labella may appear short, depending on the way they dried
scutellum	kurz eiförmig	triangular
bristles	2	2
lower squama	kurz	linear
abdomen	der Hinterleib . . . und nicht sehr langen braunschwarzen Borsten am Hinterrande des letzten Abschnittes (Lw.) Hendel in tables: Hinterleib ohne Macrochaeten, but in text, Abdomen ohne eigentliche macrochäten.	moderate bristles on apical tergites

It is not possible to make a complete survey of this group at present. Certain species, such as *Trypanea brachystigma* Bezzi 1924, *Trypanea semiatrata* Hering, 1942, and *Euarestella abyssinica* Hering, 1937, may belong here, and a wider survey of allied genera is needed.

[Migmella planifrons (Loew) comb. n.]

Trypeta planifrons Loew, 1861, *Berl. ent. Zeit.*, **5**: 277, Plate II, Fig. 13.
Euaresta planifrons (Loew) Bezzi, 1918, *Bull. ent. Res.*, **9**: 30, 1924, *id.* **15**: 129.

The type, a male, is in the Riksmuseum, Stockholm, Sweden. Through the kindness of Dr. Réné Malaise I was able to examine the type and so make sure that the following specimens are the same species:

NATAL: Moseley (near Sarnia), 1 ♂, 19.x.1936, 1 ♂, 1 ♀, 27.x.1936, 1 ♂, 1.x.1939 (*W. E. Marriott*); Pinetown, 9.x.1934, 1 ♂ (*H. K. Munro*) (S. Afr. Nat. Coll. Ins.).

The type was collected by Wahlberg, probably about 1841 in "Caffraria", a term at that time applied to most of South Africa. Since he travelled much between Durban and Pietermaritzburg, Moseley is designated the type locality as his specimens have no locality labels.

On the wing (Fig. 211) the detail of the hyaline spots, especially below the fourth vein, is very variable, not quite alike in any two specimens.

The female is like the male; length 7·0 mm., wing 5·7 mm. Pre-abdomen light brown, slightly blackened, apical bristles pale, long. Oviscape shining black, black pubescence, elongate, 2·7 mm., 0·4 wing, 1·8 pre-abdomen.

Male: abdomen mainly black, with a distinct, narrow, yellow hind margin on tergites 2, 3 and 4, apical bristles shorter than in female. Sternites (Fig. 215 *a*); 5 with deep, angular indent, the narrow posterior corners divergent; tergum 9 (Fig. 216 *a*) flanges moderate, semicircular; aedeagus (Fig. 217); vesica reduced; the lateral fine hairs are on lower side in figure.

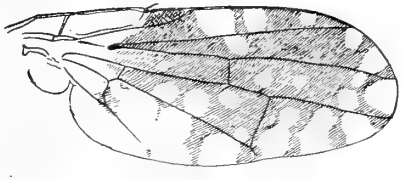

FIG. 211.—*planifrons.*

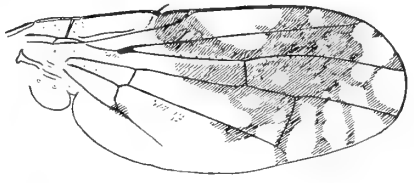

FIG. 212.—*elgonensis.*

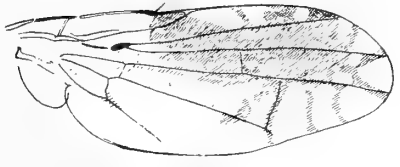

FIG. 213.—*amplifrons.*

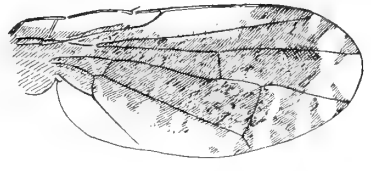

FIG. 213A.—*scolia.*

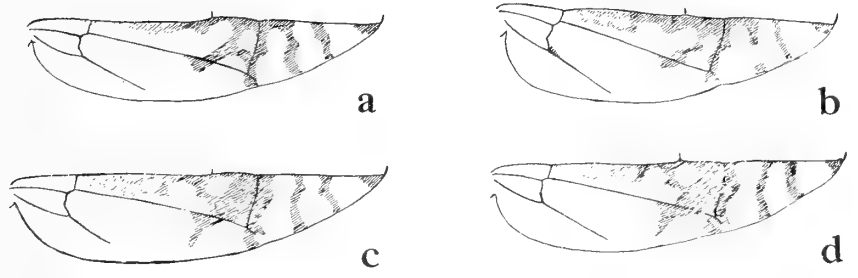

FIG. 214, *a–d.*—*amplifrons*, variations in pattern below vein 4; (*c*) and (*d*), right and left wings of same specimen.

Migmella spp., wings.

[Migmella amplifrons (Bezzi) comb. n.]

Euaresta amplifrons Bezzi, 1920, *Bull. ent. Res.*, **10**: 259, Plate XVIII, Fig. 7.
Euaresta ? amplifrons Bezzi, 1926, *Ann. Transv. Mus.*, **12**: 333.

Type in British Museum, a rather damaged male from Natal: Malvern, near Durban. Bezzi seemed doubtful about the female without locality in the Transvaal Museum, but it is this species.

Specimens have been taken by Mr. W. E. Marriott in the Natal Drakensberg, 1 ♂, 1 ♀, Natal National Park, vii.1945; 1 ♂, 1 ♀, Loteni River, vii.1941, and 1 ♀, Singati area, vii.1949 (S. Afr. Nat. Coll. Ins., Pretoria). It is interesting that these were taken during mid-winter, Mr. Marriott being a keen mountaineer. In the British Museum is a male from Eastern Cape Province: Katberg, 4000 ft., xii.1932 (*R. E. Turner*). This specimen has a heavier wing-pattern.

The bristles of the head are brownish, the hind upper orbital white, also an occasional third, small, anterior lower orbital; proboscis: mostly the labella dry splayed out, when closed are rather more than half length of mouth-opening; wing (Figs. 213, 214) elongate pattern, *Trupanea*-like, with apical fork, very variable, especially below vein 4 (Fig. 214, *a–d*), no two alike and often different on each wing of a specimen (Fig. 214, *c, d*); in the Katberg specimen the pattern is heavier than usual, but only the one specimen makes it not possible to say if such a pattern is normal in the area.

Abdomen black with strong, dark yellow hind margins to tergites; apical bristles moderate; oviscape short, 1·25 mm., 0·5 pre-abdomen, 0·2 wing.

Male: sternites 4 and 5 (Fig. 215 *b*); tergum 9 (Fig. 216 *b*); aedeagus (Fig. 218).

Migmella elgonensis sp. n.

Differs from the other two species in details of wing-pattern and black abdomen which lacks the yellow hind edges to the tergites.

KENYA: Mt. Elgon, Heath Zone, 10,500–12,500 ft., ii.1935 (*F. W. Edwards*), holotype ♂, allotype ♀, 2 ♂, 1 ♀ paratypes. Type ♂ on *Artemisia afra.*

Length, ♂ 4·7 mm., ♀ 5·0 mm.; wing, ♂ 4·8 mm., ♀ 5·0 mm. or longer.

Head angular, fronto-facial angle about 90°; length, height, width, 7:8:10; light brown, blackened centrally behind, postoculars whitish, postorbitals 3–4 with some black setulae; eye rounded; frons flat, wide, length 0·9 width at vertex, which is 0·6 width of head, brownish, dust dense, whitish brown on sides, anteriorly and medially, submedially fawn, bristles brown, hind upper pale, 3 lower orbitals, the anterior one small, whitish, ocellars strong; lunule, length 0·4 width, dusted as frons; antennae 0·7 face, third joint with upper apical angle about 90°, arista very short pubescent, brown; epistome projecting about half width third antennal joint, parafacials about 0·3 and genae as wide as this joint, falcella strong, genal bristle brown; proboscis short, hooked, the labella when closed about half length of mouth-opening.

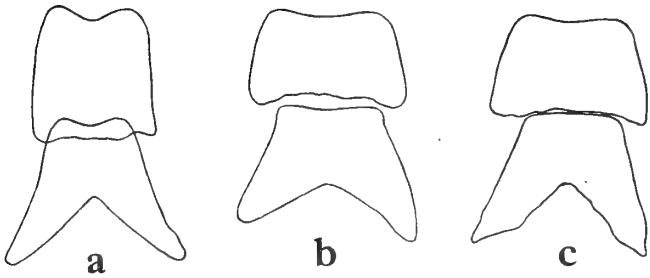

FIG. 215.—*Migmella* spp., sternites 4 and 5; (a) *planifrons*, (b) *amplifrons*, (c) *elgonensis*.

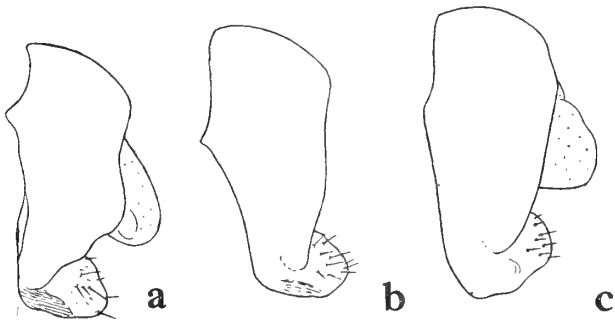

FIG. 216.—*Migmella* spp., tergum 9, lateral; (a) *planifrons*, (b) *amplifrons*, (c) *elgonensis*.

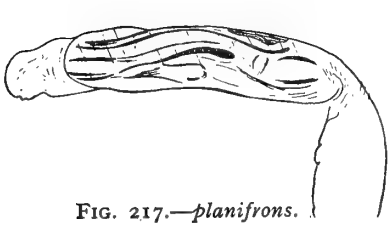

FIG. 217.—*planifrons*.

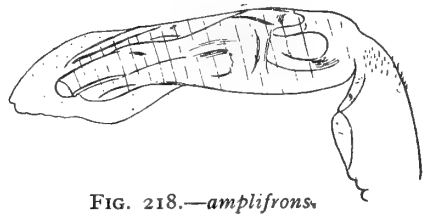

FIG. 218.—*amplifrons*.

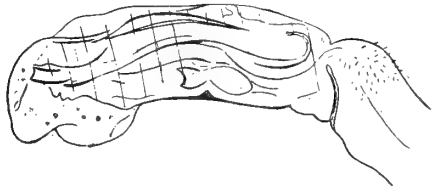

FIG. 219.—*elgonensis*.

Migmella spp., aedeagi.

Thorax: dorsum, pubescence rather sparse, finer, brownish on middle, rather coarser, white, peripherally, longer in front and behind, dust moderate, whitish grey, a very slight indication of median and dorso-central stripes in some lights; bristles brown, hind notopleural, sternopleural and pteropleural very pale yellowish; pleural pubescence sparse, white, rather longer; squamae brownish, lower narrow; halteres brown; legs yellowish brown, fore and hind femora slightly blackened; wing (Fig. 212) a variable *Trupanea* pattern, the large indent in marginal cell may be partly or completely divided into two, vein 3 bare; scutellum, length 0·6 width, more rounded at apex, 2 bristles.

Abdomen black, no yellow hind edges to tergites, dust moderate, grey, pubescence white. Oviscape short, 0·9 mm., about 0·5 pre-abdomen, 0·2 wing.

Male: sternites (Fig. 215 *c*); tergum 9 (Fig. 216 *c*); aedeagus (Fig. 219).

Migmella scotia sp. n.

An entirely brown species, the elongate wing-pattern with a hyaline margin along costa, at apex a broken, rayed pattern.

KENYA: Mt. Elgon, Heath Zone, 10,500–11,500 ft., ii.1935 (*F. W. Edwards*), holotype ♀.

Length 4·9 mm.; wing 4·3 mm.

Head yellowish below; length, height, width, 8:7:10; postorbitals 1 white with a row of shorter dark bristles; frons a little wider than long, 0·58 width of head, strongly prominent anteriorly; a median stripe and sides broadly grey-dusted; 2 lower orbitals, a minute, pale third in front on one side; lunule short; antennae dark brown, 0·9 face, arista pubescent, parafacials wide, 0·6 width third antennal joint, epistome moderately prominent; labella short.

Thorax: dorsum dark brown down middle and on to scutellum, weaker dorso-central stripes and broadly on sides, grey-dusted between, pubescence dark on brown, pale on grey; bristles normal, dorso-centrals at suture, 2 long scutellars; legs brown; lower squama narrow; wing (Fig. 213 *a*) broadly hyaline along costa, apical rays broken, small spots in discal yellowish.

Abdomen blackish, slight grey dust, pubescence pale, whitish, apical bristles moderate; oviscape short, 1·0 mm., 0·6 pre-abdomen, 0·25 wing, flat in specimen, pale pubescence.

TRUPANEA-TEPHRITIS SERIES

Among the heterogenous species placed by Bezzi, 1924, in *Trupanea* are *augur* Frauenfeld and *confluens* Wiedemann, both of which represent distinct genera. Hendel put the former in a subgenus, *Goniurellia*, and a new genus, *Dectodesis*, is proposed for the latter.

1. Three dark lower orbitals; labella short; lower squama narrow; wing-pattern short, rayed, or reduced, apical fork usually absent; aedeagus with a strong, curved, thorn-like cornutus . . . . . *Trupanea*

2. Two dark and 1 anterior white lower orbitals; wing-pattern elongate, rayed, usually a strong apical fork:
   (*a*) labella elongate, narrow; lower squama linear; usually a wide, brown, median stripe on thorax; vesica with a "tail", generally hairy; phallosome long as usual . . . . . *Dectodesis*
   (*b*) abellla short; lower squama wider (half to about as wide as upper); vesica very long, membranous and a stout basal spine may be present; phallosome very short . . . . . *Goniurellia*

It is not possible to give here a complete survey of the complex of species associated with *Trupanea* (*Trypanea* auctt.). It is, indeed, a world problem.

TRUPANEA Schrank

Trupanea Schrank, 1796, *Naturh. u. öcon. Briefe uber d. Donaumoor*, p. 147.
Trypanea Schrank, Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 197.
Trypanea auctt.—a complete synonymy is not needed here.

Type species: *Musca stellata* Fuessly.

The genus is accepted in the restricted sense of Hendel, 1927, except that *Goniurellia* is excluded. The chief characteristics are: 3 dark lower orbitals; short labella; 2 scutellars; lower squama narrow; wing with generally an apical rayed pattern not extended towards base, sometimes reduced, apical fork mostly absent; tergum 9 in male with small flanges and a conspicuous, curved, thorn-like cornutus on aedeagus—the resemblance of the latter to what is seen in *Acanthiophilus* may be noted.

[Trupanea stellata (Fuessly)]

Musca stellata Fuessly, 1775, *Verz.*, 1125.
Trypanea stellata (Fuessly) Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 121, Plate V, Fig. 9 (see for synonymy). Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 201, Text Fig. 74, Taf. 16, Figs. 3 and 4 (not 2 and 3).

Specimens from Germany kindly sent to me by the late Dr. Walther Horn of the Deutsches Entomologisches Institut are taken to be the true *stellata*. Apart from the rather complex synonymy given by Efflatoun, more detailed study will be needed to establish the correct identity of various very similar forms, and the wide distribution records noted by Hendel may have to be revised. Wing: a short, apical, rayed pattern without apical fork; 1 or 2 setulae at knot above and below; fringe on hind margin dark to middle of axillary region, colourless to base.

Male terminalia: sternites 4 and 5 (Fig. 222 *a*); 5 in this preparation shows a slight internal ridge recalling what is seen in *Acanthiophilus helianthi*. Tergum 9 (Fig. 223 *a*, lateral) oval, no marked features but small flanges. Aedeagus (Fig. 224); vesica membranous, small but elongate, a base a strong, curved spine-like cornutus. The vesica may appear more extensive in better

preparations; the dorsal, rather swollen part (somewhat collapsed in this preparation) is clothed with extremely fine hairs only just resolved at 600 magnification.

[Trupanea repleta (Bezzi)]

Trypanea aucta Bezzi, var. *repleta* Bezzi, 1918, *Bull. ent. Res.*, **9**: 45, Fig. 3.
Trypanea repleta Bezzi, 1924, *Bull. ent. Res.*, **15**: 142 (in tables).

1 ♂, Port Said (*N. E. Waterfield*), 1915:400 (British Museum). A damaged specimen without head. To discover the status of this form needs further study on sufficient material.

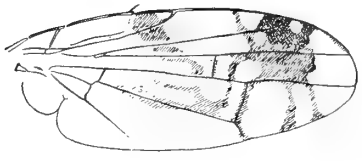

FIG. 220.—*sedata*.

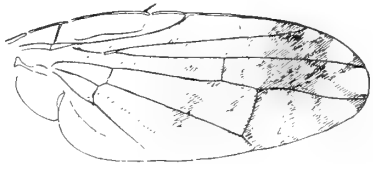

FIG. 221.—*pollens*.

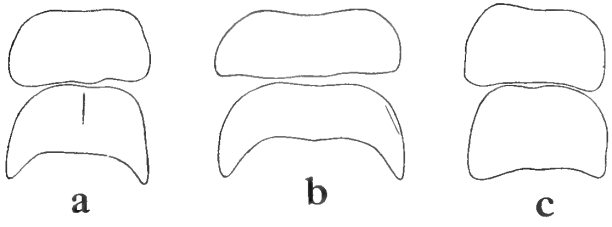

FIG. 222.—*Trupanea* spp., sternites 4 and 5; (a) *stellata*, (b) *sedata*, (c) *pollens*.

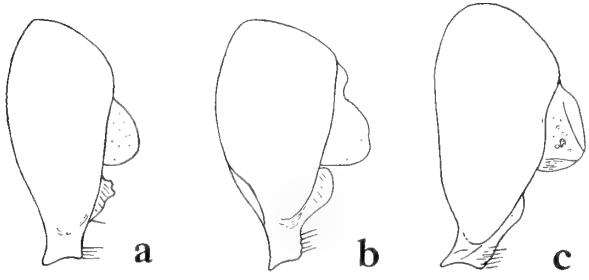

FIG. 223.—*Trupanea* spp., tergum 9, lateral, showing flange; (a) *stellata*, (b) *sedata*, (c) *pollens*.

Trupanea sp.

UGANDA: Ruwenzori, Mt. Karangora, 9900 ft., 1 ♀; Kigezi district, Mt. Muhavura, 7000 ft., xi.1934, 2 ♀ (*F. W. Edwards*).

These 3 females may belong to an undescribed species, but their correct identity must await the study of large series of other specimens that may represent a group of various very similar species.

Trupanea sedata sp. n.

Differs from species of *Trupanea* in the narrower sense as the stigma is blackish with only a weak bar towards upper cross-vein and an irregular bar across discal cell towards anal.

KENYA: Mt. Elgon, 10,500–12,500 ft., ii.1935; holotype ♂, allotype ♀, 9 ♂, 14 ♀ paratypes, on *Artemisia afra*; 5 ♀ paratypes, Heath Zone, 10,500–11,500 ft.; 1 ♀ paratype, on flowers of *Helichrysum formossissimum*, 10,500–12,500 ft.

Length, ♂ 2·9 mm., ♀ 3·5 mm.; wing, ♂ 3·5 mm., ♀ 3·7 mm.

Head angular; length, height, width, 6:6·5:10; brownish, black behind and across hind part of frons; eye large, rounded-oval; frons as long as wide, flat, prominent anteriorly, 3 dark lower orbitals, hind upper pale, bristles short in male, longer in female; lunule moderate; antennae a little shorter than face, joint 3 blackish brown, arista pubescent; epistome moderately prominent; labella short.

Thorax dust dense, whitish grey, pubescence white, bristles brown, dorsocentrals at suture; 2 scutellars; lower squama narrow; legs brown, femora somewhat blackened in male, rather less or barely in female. Wing (Fig. 220) pattern very variable; no setulae observed at knot; fringe on hind margin dark to middle of axillary region.

Abdomen black, dense grey dust, pubescence very pale yellow, apical bristles moderate; oviscape black, white pubescence, black at tip, short, 0·75 mm., 07·5 pre-abdomen, 0·2 wing.

Male: sternites (Fig. 222 *b*) wide and short, 5 with wide, shallow indent; tergum 9 (Fig. 223 *b*, lateral), flanges small. Aedeagus (Fig. 225), the curved, spine-like cornutus strong.

Trupanea superdecora Bezzi

Trypanea superdecora Bezzi, 1924, *Ann. S. Afr. Mus.*, **19**: 570, Plate XV, Fig. 129; 1924, *Bull. ent. Res.*, **15**: 147.

UGANDA: Ruwenzori, Kilembe, 4500 ft., xii.1934–i.1935, 1 ♀ (*F. W. Edwards*).

This is a large female and appears to be this species. Bezzi records a female from Nyasaland, otherwise the species is only known from South Africa. It is

not quite typical of *Trupanea*; there is a strong lower ray of the apical fork on the wing, and the lower squama is rather wider. The following new species may be more nearly allied to *superdecora* than to the other species.

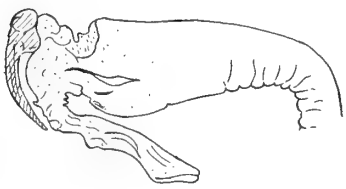

FIG. 224.—*stellata.*

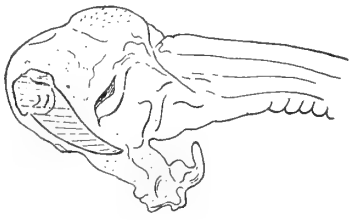

FIG. 225.—*sedata.*

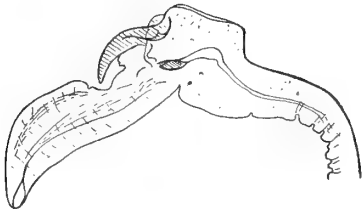

FIG. 226.—*pollens.*

Trupanea spp., aedeagi.

Trupanea pollens sp. n.

This species is placed here although it is not quite typical of the genus. It has apparently normally 4 dark lower orbitals often with 1 or 2 supernumeraries; there is a variable apical fork on the wing-pattern.

KENYA: Mt. Elgon, 10,500–12,500 ft., ii.1935, holotype ♂, allotype ♀, 2 ♂, 3 ♀ paratypes; Heath Zone, 10,500–11,500 ft., on *Circium* sp. af. *buchwaldi*, and 2 ♂ paratypes; Aberdare Range, Mt. Kinangop, Cedar Forest, 8000 ft., 3 ♂, 3 ♀ paratypes; 9000 ft., 2 ♂, 1 ♀ paratypes; 10,000 ft., 2 ♂, 8 ♀ paratypes (*F. W. Edwards*). UGANDA: Kigezi district, Mt. Sabinio, 8000 ft., xi.1934, 3 ♀ paratypes, on flowers of *Carduus leptocanthus*; Kanaba, 7800 ft., 1 ♂ paratype (*F. W. Edwards*); Imatong Mts., 10,000 ft., ii.1936, 1 ♀ paratype (*D. R. Buxton*).

Coryndon Museum material:

KENYA: Nairobi, viii.1937, 1 ♂, 2 ♀ paratypes; Uplands, viii.1937, 2 ♂, 3 ♀ paratypes; Limuro, viii.1937, 1 ♂, 2 ♀ paratypes (*V. G. L. van Someren*); reared from flowers of Compositae.

Length, ♂ 4·8 mm., ♀ 6·2 mm.; wing, ♂ 5·0 mm., ♀ 5·3 mm.

Head yellow, black centrally behind above neck; length, height, width, 6:6:10, or slightly higher than long; eye rounded oval; frons brownish yellow, blackish behind, flat, width 0·8 length, 0·4 width of head; there may be a trace of pubescence, bristles brown, hind upper orbital white, 4 dark lower sometimes 1 or 2 extra, there may be 1 or 2 yellow setae among the yellow postorbitals; lunule semicircular, length about 0·5 width; antennae brown, 0·75 face, arista pubescent; epistome projecting about half width of antennae; labella short.

Thorax dust dense, greyish with brownish tinge, pubescence white; bristles brown, hind notopleural white, sometimes a second, lower, paler mesopleural; dorso-centrals just behind suture; 2 scutellars; legs yellowish brown; halteres yellowish; squamae light brown, lower 0·6 to nearly as wide as upper; wing (Fig. 221) stigma slightly blackish yellow, pattern variable, lower ray of apical fork usually well marked, upper variable, or only a spot at tip of vein 3; 1 or 2 setulae at knot above and below; dark fringe on hind margin complete, including alula, pale (colourless) only in deep cleft between alula and axillary region.

Abdomen dull blackish; dense dust grey with brown tinge; pubescence coarse, sparse, shining pale yellow, apical bristles strong, brown. Oviscape shining black, pubescence black, pale towards base; length 2·3 mm., 1·3 pre-abdomen, 0·4 wing. Venter blackish, slight ferruginous tinge, hind margins of sternites more ferruginous, membrane black.

Male: sternites (Fig. 222 *c*) 4 and 5 more rectangular, narrower, indent shallow; tergum 9 (Fig. 223 *c*, lateral) a small, short, flange; aedeagus (Fig. 226), curved cornutus conspicuous, vesica moderate and complex, swollen part behind cornutus with extremely minute hairs.

GONIURELLIA Hendel

Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 198.

Erected as a subgenus of *Trupanea*, genotype *augur* Frauenfeld. Differences from *Trupanea* and *Dectodesis* have been noted.

[Goniurellia augur (Frauenfeld)]

Urellia augur Frauenfeld, 1856, *Sitzungsbr. K. Akad. Wien*, **22**: 557, Fig. 10.
Trypanea augur (Frauenfeld) Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 123, Plate I, Figs. 15 and 23, Plate V, Fig. 5. Bezzi, 1924, *Bull. ent. Res.*, **15**: 141, 144.
Goniurellia augur (Frauenfeld) Hendel, 1927, in Lindner, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 199.

See Hendel and Efflatoun for references. It may be noted that Efflatoun's Fig. 15, Pl. I, is not *augur*.

DECTODESIS gen. n.

In general, like *Trupanea*, pertinent differences have been given.

Head angular, frons bare, 2 dark and 1 white lower orbitals, labella elongate, wing-pattern elongate, broadly united to stigma, with strong apical fork and rays; 2 scutellar bristles; vesica with a membranous "tail" with a bunch of hairs or hair-like spines.

Type species: *Trypeta confluens* Wiedemann.

Apart from the two new species described here, it has still to be decided what other species should be included, but this must await future study. The one new species, *inundans*, is included although it has 2 short apical scutellars and the tail of the vesica has no hairs; otherwise it is quite like the other two.

In *confluens* the basal part of the wing is quite hyaline; *monticola* has a pale, subreticulate pattern, while in *inundans* the hind marginal area is broadly and rather densely covered with black microtrichiae that cause the ends of the rays to become blurred.

Dectodesis confluens (Wiedemann) comb. n.

Trypeta confluens Wiedemann, 1830, *Aussereurop. zweifl. Insekt.*, Loew, 1861, *Berl. Ent. Zeit.*, **2**: 510. **5**: 302, Plate II, Fig. 29; 1862, *Öfv. K. Vet. Akad. Förh.*, **1862**: 7. Becker, 1903, *Mitt. zool. Mus. Berl.*, **2**: 131.

Tephritis confluens (Wiedemann) Schiner, 1868, *Novara Reise*, **2**: 269.

Urellia confluens (Wiedemann) Adams, 1905, *Kansas Univ. Sci. Bull.*, **3**: 170. Bezzi, 1908, *Boll. Soc. Ent. Ital.*, **39**: 142.

Trypanea confluens (Wiedemann) Bezzi, 1918, *Bull. ent. Res.*, **9**: 43; 1924, *id.* **15**: 145; *Ann. S. Afr. Mus.*, **19**: 566, Plate XV, Fig. 123; 1928, *Ann. Transv. Mus.*, **12**: 335. Munro, 1925, *Union S. Afr., Dept. Agric. ent. Mem.*, No. **3**: 59; 1926, *id.* **5**: 34; 1929, *id.* No. **6**: 16; 1935, *id.* No. **9**: 44; 1929, *Ann. S. Afr. Mus.*, **29**: 34.

Specimens of this common, widespread species were taken at various localities:

KENYA: Hills north-east of Nakuru, *c.* 9300 ft., 6.iii.1935, 8 ♂, 7 ♀, "on *Helichrysum* sp. 'B'"; Nyeri Track, 10,500 ft., 1 ♂; Mt. Kinangop, 8000 ft., "on *Conyza* sp.", 1 ♀; Mt. Elgon, ii.1935, 3 ♂, "on *Helichrysum ? nandense*", 10,500–12,500 ft., "on *Helichrysum formossissimum*, 2 ♂, 1 ♀; Heath Zone, 2 ♂ (all *F. W. Edwards*). UGANDA: Imatong Mts., 10,000 ft., ii.1936, 1 ♀ (*D. R. Buxton*); Kigezi district, Mt. Sabinio, 8000 ft., xi.1934, "on flowers of *Helichrysum nandense*", 1 ♂, 1 ♀ (*F. W. Edwards*).

Wing (Fig. 227); in this series the ray over the outer end of discal cell may be shortened, or reach the fifth vein, or rarely strongly to wing-margin. Spot on middle of vein 5 sometimes strong; no reticulation in basal, hyaline portion of wing.

Male: aedeagus (Fig. 230); hairs on "tail" usually long, may be difficult to see and appear short, or possibly at times abraded.

In South Africa *confluens* has been reared from flowers of species of *Helichrysum, Erigeron* and *Gnaphalium*, and it is probable it was breeding in the species of *Helichrysum* noted above. Small flowers, such as those of *Gnaphalium*, have only 1 larva in each, while in large flowers of *Helichrysum* there may be 10 or more. The larvae eat into the base of the capitulum to some extent and fasten themselves there when pupating, so that the puparia do not fall out when the flower dries and the seeds disperse.

Dectodesis monticola sp. n.

UGANDA: Kigezi district, Mt. Sabinio, 8000 ft., xi.1934, holotype ♂, allotype ♀, 2 ♂, 2 ♀ paratypes; Kanaba, 7800 ft., 1 ♂, 2 ♀ paratypes; Mt. Mgahinga, 8000 ft., 20.xi.1934, 1 ♀ paratype. KENYA: Hills north-east of Nakuru, *c.* 9300 ft. 6.iii.1935, 1 ♂ paratype "on *Helichrysum* 'B'"; Mt. Kinangop, 10,000 ft., 1 ♂ paratype; Mt. Elgon, 10,500–12,500 ft., ii.1935, "on flowers of *Helichrysum engleri*", 1 ♂ paratype (all *F. W. Edwards*).

Length, ♂ 2·7 mm., ♀ 3·0 mm.; wing, ♂ 2·8 mm., ♀ 3·0 mm.

Quite like *confluens* in general appearance; 2 dark and 1 small, white lower orbitals, 2 scutellars. Differences are: brown stripe down mesonotum and scutellum much wider, usually extending well outside prescutellar bristles; wing (Fig. 228) stigma black; apart from normal dark pattern basal part of wing with black microtrichiae with a faint infuscation forming a broad, broken reticulation, microtrichiae white on hyaline spots along inner edge of dark pattern.

Abdomen brownish black, slight brownish dust, pubescence pale, shining. Oviscape shining black, black pubescence, short (relatively shorter than in *confluens*), 0·75 mm., 0·75 pre-abdomen, 0·25 wing.

Male: aedeagus (Fig. 231) moderately sclerotised vesica with a rather short, stout "tail" covered with bristle-like hairs.

Dectodesis inundans sp. n.

Very like *confluens*, having also a broad, brown stripe on mesonotum and scutellum; it differs in having 4 scutellar bristles and in details of wing-pattern.

KENYA: Aberdare Range, Nyeri Track, 10,500 ft., x.1934, holotype ♂; Mt. Kinangop, 8000 ft., x–xi.1934, allotype ♀, 1 ♀ paratype; Mt. Elgon, 10,500–12,500 ft., ii.1935, 1 ♂ paratype, "on flowers of *Conyza ruwenzoriensis*"; Mt. Elgon, Heath Zone, 10,500–11,500 ft., 1 ♂ paratype; 10,500–12,500 ft., "on *Artemisia afra*", 1 ♀ paratype. UGANDA: Kigezi district, Mt. Sabinio, 8000 ft., xi.1934, 2 ♀ paratypes (all *F. W. Edwards*).

Length, ♂ 2·3 mm., ♀ 3·6 mm.; wing, ♂ 2·5 mm., ♀ 3·5 mm.

Head straw-coloured, about as high as long; frons somewhat projecting, flat, bare, brown, slight whitish dust on middle line, stronger on sides, ocellar

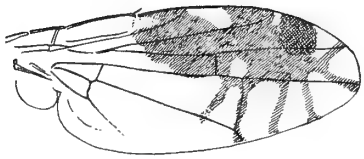

FIG. 227.—*confluens.*

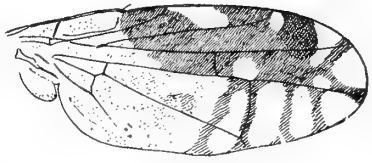

FIG. 228.—*monticola.*

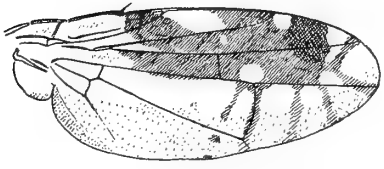

FIG. 229.—*inundans.*

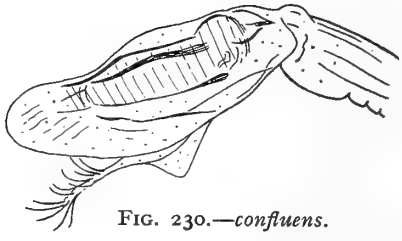

FIG. 230.—*confluens.*

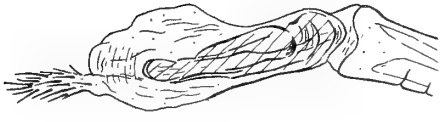

FIG. 231.—*monticola.*

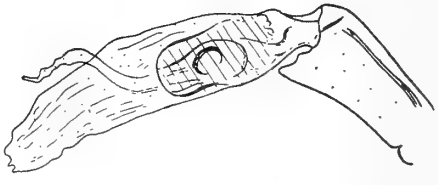

FIG. 232.—*inundans.*

Dectodesis spp., wings and aedeagi.

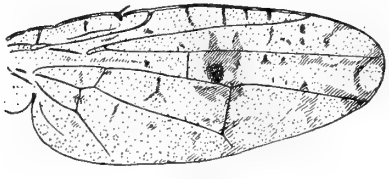

FIG. 233.—*Clematochaeta euopis.*

dot black, 2 dark and 1 white lower orbitals, ocellars strong; lunule short, brown; antennae short, yellowish brown; epistome moderately prominent, parafacials about 0·25, genae 0·3–0·5 width of third antennal joint; labella about as long as mouth-opening.

Thorax blue-dusted, a broad, brown stripe on mesonotum and scutellum, pubescence rather fine and white, brownish on brown stripe; bristles normal, dorso-centrals at suture, apical scutellars short and crossed, 0·3 basals; legs and halteres light brownish; lower squama linear, upper wide, yellowish with brown rim; wing (Fig. 229) stigma black, microtrichiae on basal portion mainly black and form a marked, broad, blackish band along hind margin of wing from tip of alula, across third posterior, most of discal and second posterior cells, the ends of posterior rays becoming blurred, there is a very slight infuscation of the membrane in third posterior cell.

Abdomen black, slight brownish dust and rather coarse, white pubescence. Oviscape flattened in specimens, shining black pubescence white at base, shorter and black otherwise, 0·7 mm., 0·7 pre-abdomen, 0·2 wing. Venter: membrane and first 3 yellow, hind sternites black in female.

Male: venter and membrane blackish, genitalia black. Aedeagus (Fig. 232) moderate basal sclerotisation, vesica with a bare "tail".

TEPHRITIS Latreille

Latreille, 1804, *Hist. Nat. Crust. Ins.*, **14**: 389.
Efflatoun, 1924, *Mém. Soc. R. ent. Egypte*, **2**: 99.
Hendel, 1927, in Linder, *Fl. Pal. Reg.*, 49, *Trypetidae*, p. 176.
Hering, 1944, *Siruna Seva*, **5**: 17.

A complete bibliography of this palaearctic genus is not needed here, nor any detailed consideration. It has been considered that the species included by Hendel were polyphyletic, and it seems that Hering has grouped an even larger number in the genus. Whether or not the following is the only Ethiopian species that may legitimately be included is an open question.

Tephritis cinerea Munro

Munro, 1931, *Bull. ent. Res.*, **22**: 123, Fig. 4.

KENYA: Mt. Elgon, 10,500–12,500 ft., 9 ♂, 6 ♀, on *Artemisia afra*; 1 ♀, on *Artemisia* flowers, 11,500 ft.; 1 ♂, 14 ♀, on *Protea*; 1 ♀, Alpine Zone, on flowers of *Helichrysum armatum*; 1 ♂, 1 ♀, on flowers of *H. engleri*; 1 ♂, 1 ♀, on *Erlangia* sp.; 2 ♀, Heath Zone, 10,500–11,500 ft. (all *F. W. Edwards*).

In South Africa the species breeds in the flowers of *Artemisia afra*, and is usually numerous when the plant is in flower. Of many collected and reared, about 2% have only 1 upper orbital.

RHABDOCHAETINAE

In the East African material of the Expedition it is rather surprising that there are few of this group, no more than 10 specimens representing 5 species. This may be actual absence due to lack of suitable host-plants, or that the flies were not in evidence during the collecting period.

One species is the widespread *"Rhabdochaeta" nigra*, another a strikingly large species described here, but representatives of 3 species must await the study of many hundreds of specimens from other sources.

The group as a whole may prove difficult and there are certainly some knotty nomenclatorial problems to be solved.

Rhabdochaeta nigra Bezzi

Bezzi, 1924, *Bull. ent. Res.*, **15**: 151.

Both the generic and specific status of this species need consideration. As far as may be judged, the following specimens belong to Bezzi's species.

UGANDA: Ruwenzori, Fort Portal, Mpanga Forest, 15.xii.1934 (*F. W. Edwards*), 1 ♀; Kigezi district, Mabungo Camp, 6000 ft., xi.1934 (*J. Ford*), 1 ♀; Masaka, 13,xi.1934 (*F. W. Edwards*), 2 ♀.

CLEMATOCHAETA Hering

Hering, 1941, *Ann. naturhist. Mus. Wien*, **51**: 205.

The only clue as to what this genus may be is that the genotype, *Euribia perpallida* Bezzi, is a known species.

Clematochaeta euopis sp. n.

UGANDA: Ruwenzori, Mt. Karangora, 9900 ft., ii.1935, holotype ♀ (*F. W. Edwards*).

I am indebted to Mr. H. Oldroyd for comparing a specimen of mine with the type of *Euribia perpallida* Bezzi in the British Museum. Comparison of essential characters indicates that this female is probably congeneric with *perpallida*. There are, however, marked differences: *perpallida* is a small species, ♀ length 3·4 mm., wing 2·7 mm., oviscape 1·0 mm., while the new species is much larger, 6·0 mm., wing 5·5 mm., oviscape 2·5 mm., but the oviscape is relatively only slightly longer. *"Camaromyia" acrophthalma* Bezzi (1918) may come near here, but has long apical scutellars.

Head length, height, width, 6:6·5:10; brown, more or less blackish behind, postoculars yellow, inner verticals dark; frons flat, bare, as long as wide, about 0·5 width of head, 2 dark and 1 white lower orbitals, ocellars short, pale, no pre-ocellars; lunule short; antennae nearly as long as face, third joint pointed

at tip above, arista micropubescent; epistome slightly prominent; gena with a row of pale bristles extended from behind below eye, bristle darker; palpi narrow, rounded at end where black setulae.

Thorax (discoloured) black, moderate grey dust and yellowish pubescence, bristles brown, dorso-centrals at suture, scapulars not apparent (or abraded —present in *perpallida*); legs brown, only a tiny dark spot on outer side of mid-femora, tarsi almost ferruginous; lower squama narrow; halteres light brown; scutellum yellowish brown, 4 bristles, apicals 0·3 basals; wing (Fig. 233) pattern a scattered, undefined, subreticulation; at base of first posterior cell a dark spot with a conspicuous, white spot on either side; the wing-surface covered with black microtrichiae and spotted with less marked, white, microtrichial spots, some forming "eye" spots, probably like that recorded by Bezzi for *acrophthalma*. The most marked eye-spot is the one at the wing-tip; the effect is caused by the more or less complete hyaline spots of the reduced reticulation being covered with black microtrichiae with a rounded patch of white microtrichiae at the centre or to one side; most of the other white spots tend to give the same effect; vein 3 setose on both sides to upper cross-vein and somewhat beyond above.

Abdomen black, slight greyish to brownish dust, long, whitish pubescence, longer on hind margins of tergites, almost as bristles on 5, on 6 bristles brown, moderate. Oviscape shining, hind two-fifths and fore one-fifth black, ferruginous between, pubescence dark, shining brown, short, 1·0 mm., 0·6 preabdomen, 0·25 wing, flat in specimen.

Species **incertae sedis**

? *Cladotricha* spp.

Sp. A. 1 ♂, *C. Abyssinia*: Managasha, 3000 m., 18.v.1914, O. Kovács.

Sp. B. UGANDA: Ruwenzori, Mobuku Valley, 7300 ft., xii.1934–i.1935 (*F. W. Edwards*), 2 ♀.

Sp. C. KENYA: Mt. Elgon, 10,500–12,500 ft., ii.1935, 2 ♂ on *Erlangia fusca* (*F. W. Edwards*).

? *Rhabdochaeta* sp.

KENYA: Aberdare Range, Mt. Kinangop, 9000 ft., 17.x.1934 (*F. W. Edwards*), 1 ♀.

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to Genera and Species

(Synonyms are in italics)